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*In view of an increase in our paper ration from the beginning of November, we are now prepared to accept a limited number of new home subscribers. The arrangements for accepting all new overseas subscriptions remain unchanged*

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## THE RAILWAY GAZETTE

33, TOTHILL STREET, WESTMINSTER, S.W.1.

## Government Rejects Rail-Road Joint Proposals

IN the House of Commons on October 14, the Minister of Transport stated that he had studied the memorandum submitted in July by the main-line railway companies and the Road Haulage Association, but that the Government had other plans for the solution of the problem. The memorandum was that dealt with at some length in our July 19 issue, and provided a basis agreed between the parties for the co-ordination of road and rail freight transport. It is assumed that the Minister's statement constitutes rejection of the rail-road proposals, although no indication has been given as to how the Government itself intends to deal with such matters as the correlation of rates, the classification of goods, and the basis of charging. If Mr. Barnes intended to imply that the Government's "plans" were the nationalisation of road and rail, that in itself would be no solution to these problems, which would remain to be dealt with, whatever the form of control. So far, there is no indication of how the Government would deal with matters of this kind, if it pursues its avowed intention to nationalise transport. It is its apparent oblivion to such fundamental factors in transport operation and economy that gives rise to misgivings as to whether the advocates of State control are aware of the inherent difficulties with which road and rail administrations are faced, and the fear that the mere act of nationalisation is considered as a panacea for all ills.

## Mr. Bulleid's Address to the Mechanical Engineers

Mr. O. V. S. Bulleid, who has held office longer than any other of the Chief Mechanical Engineers on the four main-line railways of this country, is nothing if not original, a characteristic borne out by his stimulating presidential address to the Institution of Mechanical Engineers, of which we publish an abridgment elsewhere in this issue. He deals first with the duties of a Chief Mechanical Engineer—the first time, we believe, that a detailed account of the responsibilities of that position has been published—and goes on to consider the drawbacks of the ordinary steam locomotive of the present day, suggesting directions in which improvements could be effected and further developments may take place. Those who feared that Mr. Bulleid had compressed so much information into his masterly paper on the "Merchant Navy" locomotives to the same Institution, that he would have nothing new to say, will have to think again. Mr. Bulleid now reveals that he has been authorised to build five steam locomotives to an entirely original design, compared with which the "Merchant Navy" and "West Country" engines are merely stages in a process of development. That the new design is for a six-cylinder double-bogie tank engine with cabs at each end is practically all we are allowed to know at present. It is of the greatest interest to know, however, that the double-bogie arrangement is derived from the Southern's twelve-wheel electric locomotive, an adaptation of an electric design to steam traction which must be unprecedented.

## Mr. Whalley's Address to the Locomotive Engineers

In his presidential address to the Institution of Locomotive Engineers, of which we give a brief account elsewhere in this issue, Mr. F. S. Whalley delighted the audience by his skill, restraint, and tact. It was, indeed, a topic on which he was qualified to speak with unrivalled knowledge, for the subject was the "Liberation" locomotive design, which was evolved at the Vulcan Foundry during the war. Mr. Whalley told the story of this unique design with a straightforward simplicity that was extremely attractive, but did not suggest the formidable nature of the difficulties which confronted the technical staff at Newton-le-Willows when the chief features of the "Liberation" type were being settled. It was left to Mr. Cyril Williams, in proposing the vote of thanks to the President, to conjure up—with a twinkle in his eye—visions of the difficulties of reconciling differences arising out of the variety of requirements, prejudices, standards, and languages to be accommodated in producing an agreed design. Mr. Whalley paid a generous tribute to Sir William Stanier, who was present, and traced the lineage of the "Liberation" type from the standard 2-8-0s of Sir William's design, which later gave rise to the Ministry of Supply's "austerity" 2-8-0 locomotive. The latter, how-

ever, did not take sufficient advantage of the Continental loading gauge to make the type generally acceptable in Europe. The address was illustrated by some of the finest lantern slides we have ever seen.

### Home Railway Traffic Receipts

Home railway traffic receipts for the four weeks to October 6 were disappointing. Although comparison with the similar period last year was affected by the increase in rates and charges from July 1 of this year, there was an overall decline in the four weeks' traffics of £1,097,000. Passenger rates declined £777,000 and merchandise by £512,000. There was a small improvement of £192,000 in coal and coke receipts. The figures for the four weeks of this and last year are compared in the table below, together with those for the first forty weeks of the two years:—

FOUR WEEKS ENDED OCTOBER 6, 1946					
	1946	1945	+ or -	Per cent.	
	£000	£000	£000	+ or -	
Passengers ...	16,268	16,985	- 777	- 4.8	
Merchandise ...	8,370	8,882	- 512	- 6.1	
Coal and coke ...	4,207	4,015	+ 192	+ 4.5	
Total ...	28,785	29,862	- 1,097	- 3.7	

AGGREGATE FOR THE FORTY WEEKS OF THE YEAR					
	1946	1945	+ or -	Per cent.	
	£000	£000	£000	+ or -	
Passengers ...	159,207	164,602	- 5,395	- 3.3	
Merchandise ...	80,222	96,585	- 16,383	- 24.2	
Coal and coke ...	37,918	36,734	+ 1,184	+ 3.1	
Total ...	277,327	297,921	- 20,594	- 7.4	

For the forty weeks of the year the total decline in traffic receipts is now £20,594,000 at £277,327,000. Merchandise receipts are lower by £16,383,000 and passenger revenue by £5,395,000. The improvement in coal and coke receipts is £1,184,000. The increase in coal traffics is, in part, due to longer internal hauls in comparison with the shorter hauls to export ports a year ago.

### Overseas Railway Traffics

After a further decline of ps. 136,485 in the fourteenth week, Central Argentine traffics showed an improvement of ps. 50,050 in the next seven days, giving a net decrease for the fortnight under review of ps. 86,435. Buenos Ayres Great Southern receipts, also, recovered in the fifteenth week, and are ps. 81,000 higher for the fortnight. Buenos Ayres & Pacific and Buenos Ayres Western traffics have recorded improvements in both weeks, totalling ps. 770,000 and ps. 155,000 respectively. A decrease of ps. 45,700 in the fifteenth week has put Entre Rios aggregate traffics behind those of 1945-46 by ps. 41,400, after previous favourable comparisons. Nitrate Railways receipts showed an improvement of £5,005 in the fortnight ended October 15, after a series of decreases, and are now £21,807 better on aggregate. Results are compared in the table below:—

	No. of week	Weekly traffics	Inc. or dec.	Aggregate traffics	Inc. or dec.
Buenos Ayres & Pacific*	15	2,500	+405	32,528	+2,754
Buenos Ayres Great Southern*	15	3,058	+361	48,357	+1,443
Buenos Ayres Western*	15	1,267	+147	17,703	+825
Central Argentine*	15	3,142	+50	46,613	+721
Canadian Pacific	41	1,324,000	-176,000	56,442,750	-5,788,500

\* Traffic returns in thousands of pesos

Increases in Canadian Pacific receipts in the third and fourth weeks of September reduced the net decline for the month to £65,500.

### Canadian Railways Seek Rates Increase

An application from a large section of its employees for a wage increase of 10 cents an hour has been formally opposed by the Canadian Pacific Railway with the suggestion that such a course should be deferred until steps are taken by the competent authorities "to assure the company the revenues it so urgently requires." Systems on which such applications have been granted, and others faced with the prospect of similar demands, have now submitted through the Railway Association of Canada a request for authority to increase all freight rates by 30 per cent. In support of this request, the association quotes examples of the rise in prices of materials compared with 1939, and estimates that even without the wage increases

of 10 cents an hour granted already by two member companies, operating costs in 1946 will be \$79,200,000 higher for wages and \$52,800,000 higher for materials than at 1939 prices. The 10-cent an hour increase mentioned above does not cover trainmen, whose organisation has now applied for a 25 per cent. increase, which would affect nine member companies of the association. Further details of the evidence given in support of the application appear in our Overseas section.

### Indian Railway Engineering Feats during the War

Among the engineering works undertaken by the Indian railways during the war was 405 miles of doubling and quadrupling, mostly in remarkably short time. For instance, the 63-mile doubling from Midnapur to Bankura involved 35,000,000 cu. ft. of earthwork, 10,000 cu. ft. of reinforced concrete, 76 girder spans, the remodelling of 10 stations, the laying or shifting of well over 100 sets of points and crossings, and the laying of 1,200,000 cu. ft. of stone ballast for cuttings and 2,500,000 cu. ft. of ashes and moorum for banks; yet the work was completed in under eight months. Similarly, the quadrupling of the Asansol-Khana section required the laying of 52½ miles of track upon 15,000,000 cu. ft. of new earthwork, and the building of no fewer than 281 bridges and culverts. The quadrupling was opened for traffic within about 12 months. Altogether, over 1,400 miles of military sidings, as well as 70 miles of permanent and 153 miles of temporary sidings for airfields, were constructed. At Avadi, near Madras, over 70,000,000 cu. ft. of earthwork and 125 miles of sidings were provided for one of the largest military bases in the Empire. Each stage was completed within the target date fixed by the Army. The works carried out in Assam for the Burma lines of communication, and the repairs of the breaches on the North Western and East Indian Railways have been described already in our pages.

### Combating Rust

To solve the problem of rust, the British Iron & Steel Research Association has been conducting extensive and intensive research. Investigations in large industrial areas show that destruction of unprotected iron and steel may take place at a rate of nearly 3 oz. per sq. ft. in a single year. This is explained by the fact that rain falling through polluted atmosphere becomes virtually a diluted solution of sulphuric acid. In desert areas, on the other hand, rust is practically negligible, and polished steel exposed for a period of five years proved to have retained a surface like a "fairly good mirror." The surface of a similar steel exposed for one day in a British industrial area was "almost completely destroyed." It is confirmed that red lead is the most effective anti-rust paint, but new lines of research indicate that unprotected special steels, containing small quantities of copper, chromium, and nickel—though not strictly stainless steels—will not corrode nearly so rapidly as ordinary mild steel. The seriousness of the problem and value of anti-rust research can be appreciated when it is realised that, in Great Britain alone, some £40,000,000 are estimated to be spent every year in protecting iron and steel from corrosion.

### Colonial Transport Administration

Practical experience of the administration of a Colonial railway has been called on by Mr. G. V. O. Bulkeley, in the suggestions which are made in an article in this issue for the administration of Colonial transport organisations. The article is based on a chapter of a book, "Transport Administration in Tropical Dependencies," by Mr. Bulkeley, which is at present in the press. The author's view is that the most unsatisfactory feature of the usual administration of transport in a dependency is the necessity for continual correspondence between the Secretariat and the heads of transport departments. This may be a contributory factor to a lack of co-operation and mutual understanding essential to the successful administration, and it is towards overcoming this that his suggestions are directed. Clearly nothing should be done to detract from the direct operative responsibility and authority of the heads of transport departments, but a positive chain of administrative

control is necessary. The problem which Mr. Bulkeley postulates is threefold: (1) To enable the administrative and business experience of the Chief Secretary and the Financial Secretary, together with their knowledge of the Colony's requirements, to be used in its transport administration; (2) to give equal attention to the State transport services and to other transport affairs of the Colony outside their orbit and to correlate all; (3) to bring into the closest contact with the Central Government, and with each other, the heads of the transport departments under some form of routine.

#### Preparing for the Swiss Railway Centenary

There are indications that elaborate preparations are being made to celebrate appropriately next year the centenary of the Swiss railways. Of added interest to the ceremonies will be the 14th International Railway Congress, to be held in Switzerland. The last congress held there was at Berne in 1910. The Swiss Locomotive Works at Winterthur is constructing a full-scale replica of the original Zurich-Baden Railway train, which is to travel all over the country, with staff dressed in the old-style uniforms, and in which passengers will be conveyed at reduced fares. A special exhibition of models is being collected—no doubt with the assistance of the several model railway clubs active in Switzerland—and will be exhibited in some twelve cities. Special functions will be held at Zurich and Baden, and attractive jubilee publications are announced. An appeal is being made to all with articles, photographs, or publications of historical interest to make them available. Clearly every effort is being exerted to do justice to the occasion.

#### Extensive Spanish Re-Signalling Programme

In February last, the Spanish Government approved a new code of signal aspects, to serve as a basis for the standardisation of the operating rules on the entire national system. At the same time, it was realised that the forthcoming electrification of some 2,800 miles of route, now decided on, made essential the modernisation of the signalling equipment, much of which was unsuited to present-day requirements and had suffered damage during the civil war. Improvement of the ordinary interlocking and telecommunications equipment already has begun, and it is proposed to use lock-and-block and colour-light signals over 2,485 miles, on about 187 of which such signals already exist. About 2,420 more miles will be fitted with lock-and-block, but will retain the ordinary mechanical-type signals. The oil lighting, however, will be replaced by electric. Automatic colour-light signalling, already in use over 95 miles near Madrid and Barcelona, will be extended a further 150 miles. Centralised traffic control on three sections, covering 130 miles, and automatic train control at all outer signals on the electrified route, will be installed.

#### A Notable Locomotive Mileage Record

What is claimed to be a world's record for accumulated mileage with any description of motive power—steam, electric, or diesel-electric—was completed during 1945 by four diesel-electric 1,200 b.h.p. passenger units of the Electro-Motive type on the Chicago, Burlington & Quincy Railroad. Since their introduction in 1936, each of these units has run over 3,000,000 miles, and the most notable record, that of Unit No. 9907B, has been a total of 3,239,967 miles in 9 years 3 months' operation. This works out at an average of 860 miles a day, seven days a week, for the entire period, and a monthly average of 29,189 miles. Out of an assigned total of 3,404,363 miles, this diesel has missed 164,396 miles only, or 4.8 per cent., by reason of defects needing repair, so that its availability for service has averaged 95.2 per cent. of its life, allowing the usual assigned periods for inspection, servicing, and maintenance. Moreover, so far from these four locomotives being used on light duties, their work, in multiple-unit twins of 2,400 b.h.p., has been the haulage of the "Denver Zephyr," one of the fastest trains in the world, allowed 16 hr. west-bound and 15 hr. 35 min. east-bound nightly for the journey of 1,037 miles between Chicago and Denver, Colorado. Even during the war years, this schedule was eased by no more than 60 min. in each direction.

### Railway Assessments

ELSEWHERE in this issue we publish a summary of the annual report of the Railway Assessment Authority for the year ended March 31, 1946. All rating authorities are represented on this authority through their associations, and in addition there are three nominees of the Minister of Health. The present representatives are individuals with long experience of local government in official capacities or otherwise, and the functions of the authority are exercised under the Chairmanship of Sir Joshua Scholefield, K.C., who has had more than half a century of legal experience. The railway companies, who are the parties mainly affected, having to pay the rates on the assessments determined by the authority, are not represented.

The most important matter referred to in the report is the settlement of the net annual values for the fourth railway valuation roll, which operates for five years from April 1, 1946. These values were fixed by an Act of Parliament which received the Royal Assent on July 26 last. While the authority felt that it would not have been right to embark on a detailed consideration of the merits of the cumulos fixed thereunder, it records that it was constrained to the view that the cumulo figures were inadequate, and, indeed, it says that the joint authority which has to determine the net annual value of the English portion of a railway undertaking carried on in England and Scotland accepted the figures under protest.

The great difficulties in implementing the provisions of the Railways (Valuation for Rating) Act, 1930, arising from the wartime financial arrangements and conditions appertaining to the four main-line companies and the London Passenger Transport Board, were pointed out in our issue of May 3, 1946. On further reflection it seems clear that to have followed any other course than that which resulted in Governmental action fixing the values for rating would have involved embarking on a protracted investigation which, having regard to all the varying factors, could not have produced a logical solution. It must be assumed that those responsible for the decision which determined the rating liability of the railways for the ensuing five years were fully acquainted with all the essential facts.

Reference is made in the report to railway canteens. The authority is required to include in the railway valuation roll any hereditament occupied for the purposes of the undertaking of a railway company. Canteens for workers became a wartime expedient, and they were essential for the welfare of railway employees, and to enable the railway undertaking to be carried on in an efficient manner. The authority, however, reached the conclusion that, because the London & North Eastern Railway Company made arrangements with catering contractors in respect of some of its canteens, the caterers were in paramount control of the premises, and that they should accordingly be excluded from the railway valuation roll and become liable to separate assessment. It is not surprising that the railway company's contention that such canteens should be included in the roll was upheld by the Railway & Canal Commission Court. This decision should be a good indication of the line to be taken in regard to staff canteens provided by railway companies, although apparently from the terms of the report the authority is still in difficulty as to whether what it describes as "registered clubs" should be included in the railway valuation roll.

Some sections of the railway valuation roll were completed as far back as December, 1943. Thereafter, any changes in occupancy so far as that particular part of the roll was concerned, could be adjusted only by a representation under Section 11 of the Railways (Valuation for Rating) Act, 1930. The authority records that approximately 900 representations under this section were received. In many instances there is no disagreement between the railway company and the rating authority, as to the inclusion or exclusion from the roll, but there is quite a number of cases in which the varying conditions which can attach to the occupation of premises owned by railway companies give rise to differences of opinion and require close investigation by the authority.

It is unfortunate that an outstanding appeal by the London County Council (which has since been disposed of) should have prevented the authority from determining the representations and revising the roll within the quinquennial period



which expired on March 31 last. The circumstances in which the notice of appeal was allowed to remain without action for so long were exceptional, and such circumstances are not likely to re-occur.

Since the report was prepared, the amending Act prescribing the cumulo values for 1946-51 has become operative, and there would appear to be reasonable probability of a much earlier settlement of the draft of the fourth roll than was the case in respect of the three preceding rolls, the completion of which was much belated in circumstances beyond the control of the authority. Rate adjustments extending to periods of five or six years hitherto have been necessary, and the chance of avoiding the clerical work which this has involved will be greatly appreciated by the railway companies and the rating authorities.

\* \* \* \*

### Future of the British Railways

**I**T would not be unreasonable to say that the reception accorded by the press to the four-company request for a public inquiry, and the L.N.E.R. scheme for the equalisation of track costs, was conditioned almost entirely by the political complexion of the paper concerned. This was to be expected. But as transport is such an important factor in our national economy it may prove a disaster if any irretrievable step be taken in the direction of nationalisation of transport without full prior consideration being given to the many far-reaching implications of such a step.

The varied activities of the British railway companies are so complex and interlinked that immense administrative and financial problems inevitably will arise in connection with nationalisation, the consideration and determination of which must seriously hamper the more urgent tasks of overtaking the tremendous arrears of maintenance, meeting public requirements, and restoring pre-war standards of service at the earliest possible date.

We think it will be generally admitted that the British railways functioned with the highest efficiency throughout the most difficult circumstances of the war, and it was the companies' foresight and enterprise which had brought their undertakings to such a high pitch of efficiency at the outbreak of war. The press generally has been quick to seize on the fact that the L.N.E.R. proposals for the equalisation of track costs do not appeal to the other companies, and it is suggested in some quarters that there is a fundamental conflict of interest in the transport industry.

In connection with its proposals for the nationalisation of the iron and steel industry, the Government found itself confronted with very serious difficulties in fixing a line of demarcation between the industry and its subsidiary businesses. We suggest that the Government may also experience similar difficulties in that connection with railway nationalisation proposals, because the railway undertakings also cover docks, hotels, steamboats, large and varied manufacturing activities, bus, and road haulage interests.

But it must be realised that the present Government is unlikely to be deterred from the pursuance of its political theories by any such difficulties. The recent very curt rejection by the Minister of Transport of the plan evolved by the railways and the Road Haulage Association for the correlation of freight rates which was embodied in the joint memorandum published last July, on the ground that the Government has other plans in mind, is somewhat ominous.

There is a distinct probability that a Bill for the nationalisation of certain important sections of transport will be submitted to Parliament in the next session. In the meantime, speculation as to the Government's intentions would be unprofitable, but it should be pointed out that, from the practical point of view, the railways feel that the present organisations are as large as can be managed efficiently from a central headquarters.

We feel, therefore, that, under nationalisation, the trading community will lose by the almost inevitable inflexibility of a nationalised transport service; that it is unlikely that the travelling public will continue to receive the service it has received in the past; that the benefits to the staff will be much less than the nationalists expect; and that the "C" road licence holders may find the scope of their present activities very considerably restricted.

### The Jubilee of the B.E.T.

**W**HEN the four British main-line railway companies secured the sanction of Parliament under Acts of August 3, 1928, to engage in general road transport activities, they adopted the policy as far as passenger road transport was concerned of co-operating with the existing large bus companies by securing a substantial (though not controlling) financial interest in such companies, and also arranged for establishing standing joint committees to secure co-ordination. At that time the bus industry was already well organised, and many of its larger units were financially associated with the British Electric Traction Co. Ltd., which had evolved an efficient system of co-operation among the units of its group. This organisation has contributed materially to the successful working of the bus companies associated with the railways, and, therefore, it is as a partner that we congratulate the B.E.T. on the celebration next week of its jubilee.

The B.E.T. was incorporated on October 26, 1896, to develop the carriage of passengers and goods by rail, tramway, and bus, and for the public supply of electricity and gas. It was thus in all senses what has since come to be called a public utility undertaking. The British Electric Traction (Pioneer) Co. Ltd. had been formed a year earlier, and so the new undertaking had the benefit of some sound preparatory work. Immediately on its formation, the company was engaged actively in obtaining Parliamentary powers to construct or acquire a number of tramway undertakings, and to electrify existing horse-drawn tramways. In a few cases, the undertakings were directly operated as branches of the B.E.T., but usually subsidiary companies were formed. Among the first tramways worked were lines in the Oldham, Stoke, Kidderminster, and Hartlepool districts, and by 1899 the company and its associated companies were carrying more than 33 million passengers per annum. Five years later the traffic had quadrupled, and the operations embraced some 313 miles of tramway track and 67 miles of bus route.

Although the B.E.T. adopted as its scheme of organisation the establishment of local companies in the various districts where it provided transport—mainly tramway—services, it secured those advantages which accrue to a very large undertaking through the medium of its head-office services. In early years this took the form of a voluntary body called the Committee of Management, which was appointed in December, 1898, and was succeeded in December, 1899, by the Committee for Associated Undertakings. This was followed by the Advisory Committee (elected by associated companies) which was constituted in April, 1902. The work carried out by these committees proved of outstanding value to the many companies associated with the B.E.T., and it was eventually decided to enlarge the scope of the committee and at the same time to give it a legal status so that it would contract in its own name. With this object the British Electrical Federation Limited was incorporated on July 19, 1907, as a company limited by guarantee, and having for its objects and powers the carrying on of the work which hitherto had been performed by the Advisory Committee, and for taking over from the B.E.T. the arrangements for carrying out standard service agreements with the federated companies. The objects may be summarised broadly as the provision on a cost basis of administrative and other services to the large group of electric traction and electricity supply companies in which the B.E.T. was then financially interested. The new Federation began its active existence on July 1, 1907, and initially some 50 companies were members. By grouping the companies in the Federation they were enabled to call on the services of highly-skilled officers to assist them in the operation of their businesses and to protect their interests on larger matters of policy. The Federation was thus able to provide for a number of relatively small entities, the advantages of a central organisation which they would have enjoyed had they been one large undertaking, without disturbing the benefits from local administration.

On March 24, 1905, a subsidiary (the British Automobile Development Co. Ltd.) was formed especially to develop motor-buses, and in 1914 nearly 19 million bus passengers were carried by the associated companies. The rapid improvement in the internal-combustion engine, due to the 1914 war, caused a general swing away from electric to motor traction, and once again the B.E.T. was in the forefront of development, con-



verting many of its undertakings to bus operation and extending services in every direction into the sparsely-populated country districts. By 1921 the changeover from tramway to motorbus had got well under way, and, although tram passengers carried by the group were 183 million, bus passengers had risen to 39 million, with 544 buses in operation.

The important changes which have taken place within the last two decades, both in substitution of tramways with motorbuses and also in the far more widespread operations of buses on rural and interurban services, have affected the Federation, and resulted in certain modifications—chiefly as the result of greater autonomy on the part of the provincial managements—but the Federation still continues to perform the same fundamental services as at the time of its establishment, and its operations are of great importance in the conduct of the road passenger transport business of Great Britain. Membership of the Federation is in practice still confined to companies in which the B.E.T. is financially interested directly or indirectly or with which that company is associated in business. Road passenger transport and electricity supply companies now predominate in the membership of the Federation. Among the motorbus companies that are full members are such companies as the Birmingham & Midland, Devon General, Hebble, Northern General, Potteries, South Wales, Western Welsh, Yorkshire Traction, and Yorkshire Woollen. Associate members include such bus companies as the East Kent, Maidstone & District, Ribble, Southdown, and Trent. An article describing the secretarial, accountancy, engineering, purchasing, insurance, advertising, and other facilities afforded the associated companies, was published in our October 22, 1937, issue.

In addition to its important position in the road passenger transport world, the B.E.T. today has extensive interests in electricity supply in the United Kingdom and Northern Ireland, and also controlling interests in a number of gas and laundry undertakings. The trolleybus undertakings are included in the group, and tramways are still operated on Tyneside. In South Wales, the oldest passenger railway in the world, the Swansea & Mumbles, is still going strong. The main business of the group, however, lies in the 9,000 buses operated by the associated companies, which ran 275 million miles in 1945.

### Railway Charges Inquiry

THE proceedings of the Charges Consultative Committee are proving longer than was expected when the inquiry began. Last week, closing speeches were made on behalf of the various passenger and goods traffic organisations, who are urging that, instead of an increase in rates, fares, and charges during 1947, charges should be reduced or, at the worst, be allowed to remain unaltered.

On behalf of the railway companies it was represented that the proposed flat increase to 37 per cent. above the pre-war level was a reasonable step in all the circumstances. After this, it was urged on behalf of the Chamber of Shipping that the Committee should pay particular attention to that portion of its remit which directs it to have regard to the importance of maintaining adequate coastwise shipping services. It was represented that the Committee should ask the Minister of Transport to take special steps to encourage the restoration of these services, and that to apply an increase of only 37 per cent. to railway rates would prejudice coastwise shipping.

Although railway costs have risen by about 75 per cent., the railway companies had recommended an increase of only 37 per cent. in the level of charges. There was, however, a totally different relationship between operating costs and charges in connection with coastal shipping services. Costs had risen by over 100 per cent., and in the case of tramp steamers, freight rates of about 200 per cent. above pre-war were required to enable the lines to carry on successfully. It was claimed that the present level of railway rates, and also the agreed charges arrangements, were causing the diversion of traffic from coastal shipping to the railways.

In these circumstances the Chamber of Shipping took an entirely different view from that taken by other bodies appearing before the Committee, and urged that many rail rates should be raised substantially. In particular, it was suggested that all port-to-port goods rates (that is, those competitive with coastal shipping) which are more than 40 per cent. below the standard charge, should be increased to the 40 per cent. level,

and other port-to-port exceptional rates should be reviewed mutually by the existing railway and coastal shipping conference machinery. Further, in the case of new agreed charges, or the renewal of existing charges, it was urged that the charge should be zoned over a certain distance, say 50 miles, so as to exclude from the basis of the charge the long-distance haul traffic which might be competitive with coastwise shipping.

The Chamber also suggested, in regard to dock dues and charges, that instead of the railways' proposal that the charges should be increased to 60 per cent. above pre-war, there should not be any increase in the existing rates on coastal liners and coastal liner cargoes, and a reduction from 40 per cent. to 15 per cent. above pre-war in the dock dues on tramp steamers and tramp steamer cargoes.

During last week's hearing the railway companies pointed out that it would take them at least six weeks to give effect to any increase which the Committee might suggest and the Minister might sanction. It will be necessary, therefore, for the Committee to complete its report very quickly if an increase in charge is to operate from January 1 next.

### Government Ownership of Railway Track

PUBLICATION in our last week's issue of the London & North Eastern Railway proposals for the Government purchase of the track and general fixed assets of the railways and the long-term lease of these assets to the companies, recalls a similar suggestion which was made some time ago in the United States of America. In a discussion of "Transportation Problems and Future Development" embodied in a National Resources Planning Board report, which the late President Roosevelt sent to Congress in January, 1942, it was stated that Government ownership in the post-war period of all rights-of-way of transportation agencies was an urgent need if a properly conceived modernisation of the transport plant as a whole was to be achieved.

Commenting on this report, our American contemporary, the *Railway Age*, of January 24, 1942, said that presumably public ownership of terminal facilities was also contemplated, for the report stated that the objectives which it outlined had to be accomplished by the public planning of terminal and right-of-way facilities adequate to accommodate modern railway, road motor, and aeroplane equipment. The suggestion for public ownership of railway rights-of-way arose from a feeling on the part of the Planning Board that the ownership of the railways, unlike other agencies, of their own rights-of-way comprised "one of the obstacles which now confront the public works programme for transport development."

In France, a generally similar principle was adopted successfully for almost a century. The early days of French Railway development seemed to foreshadow a piecemeal system of French railway construction and ownership like that which took place in Great Britain, but actually France adopted in 1842 an extensive policy of railway building designed to develop a scientifically-planned and non-competitive system. Immediate State operation was not envisaged, but the land and formation on which the permanent way rests (including viaducts, bridges, and tunnels) were provided at the expense of the State, and 99-year concessions were granted to operating companies which equipped the various lines. In other words, the infrastructure and the major engineering works were owned by the State, leaving the companies (as leasehold proprietors) to provide the permanent way, rolling stock, and other assets.

Between 1852 and 1857 most of the French railways were merged into six large systems—the Nord, Est, P.L.M., P.-O., Midi, and Ouest. As a result of this virtual "area monopoly" and also of agreements between the companies as to border traffic, there was very little competition. In some cases the construction of a line resulted in the diversion of through freight traffic, as it was specified by the State that goods must be routed the shortest way. State railway operation began in 1878 when "Le réseau des chemins de fer de l'Etat" was constituted by a law of May 18, 1878, to operate a group of ten financially-embarrassed lines. The Ouest system, serving the north-west corner of France, was taken over by the State from January 1, 1909, and this rounded off the Etat system. These arrangements remained virtually unchanged until French "grouping," when the French National Railways Company was formed as from January 1, 1938.

## British Argentine Railways

THE boards of the British Argentine railway companies, as recorded in our October 11 issue, have appointed a delegation to meet the technical advisory sub-commission to be nominated by the Argentine government under the terms of the railway agreement recently completed between the British Mission and the Argentine government for the purpose of agreeing the amount of initial capital, the constitution of the new company, the transfer, and the basis of operations generally, as well as other connected questions. The delegation, which was expected in Buenos Aires on Thursday, will consist of Sir Montague Eddy, C.B.E., Lord Forbes, Mr. H. C. Drayton, and Mr. David Pollock as legal adviser.

Altogether, 11 companies are involved in the transaction, of which eight are broad gauge, two standard gauge, and one metre gauge. They serve widely differing territories, under operating conditions which vary greatly, and the history and their principal characteristics are given briefly below:—

### Buenos Ayres Great Southern

The largest of the British-owned lines, this company was formed in 1862 to take over from the government of the Province of Buenos Aires a concession for a line about 71 miles long, which was opened to service in 1865 and now owns 5,080 miles of broad gauge (5 ft. 6 in.) railway, serves all the ports in the richest province in the Republic, among them La Plata and Bahia Blanca, and has a large interest in the B.A. Southern Dock Company.

In 1924, the company assumed the position of the B.A. & Pacific Railway as guarantor of the principal and interest of the Bahia Blanca & North Western Railway debenture stocks and dividends on capital stock at then existing rates, and took over the working of the railway, as well as the port of Galvan (Bahia Blanca), the produce market, and other installations. Jointly with the B.A. Western, the company works the metre-gauge B.A. Midland Railway.

At La Plata, the B.A. Great Southern has direct access to, and works on account of the government, the railway lines in connection with the government docks. At Ingeniero White (Bahia Blanca) the company has a steel mole and grain wharf, two grain elevators, and a large modern export granary of 80,000 tons capacity. Jointly with the B.A. Western and B.A. & Pacific, the B.A.G.S. is interested in the Cia. Ferrocarrilera de Petroleo, which owns oil wells and a refinery.

Over £3,000,000 has been invested in the following subsidiary undertakings, most of which will be taken over with the railway at values to be agreed:—

B.A. Southern Dock  
Bahia Blanca Waterworks  
La Plata Moles and Deposits  
B.A. Ensenada & South Coast Railway

B.A. Midland Railway  
Argentine Lands and Industries  
Argentine Industrial Company  
Cia. Ferrocarrilera de Petroleo

The B.A. Great Southern is operated with the B.A. Western as one undertaking, but its finances remain separate.

For many years, the B.A. Great Southern carried the largest passenger traffic in the country, and it still deals with upwards of 70 million passengers a year. It is the only railway serving the Argentine seaside resorts and derives much of its revenue from holiday-makers from Buenos Aires during the summer months. Some 40 per cent. of the goods traffic is grain and linseed, 20 per cent. general merchandise, and the remainder wool, hides, lime and stone, flour, petroleum, potatoes, and other products. The company is, by far, the largest livestock carrier, and the development of the oilfields at Neuquen adds appreciably to the earnings year by year.

### Buenos Ayres Western

The B.A. Western enjoys the distinction of being the first Argentine railway, which was built in 1857, but the present company was formed in 1890 to acquire from the government of the Province of Buenos Aires several lines of broad-gauge railway originating in the city of Buenos Aires and amounting to about 660 miles. Half the lines taken over were sold subsequently to the B.A. Great Southern and Central Argentine Railways. The company has running powers over the B.A. Great Southern into the port of La Plata and owns an independent underground goods line to the Buenos Aires docks. New constructions, from time to time, have brought the total length of line up to 1,924 miles. The main line runs through Mercedes—where it connects with the B.A. & Pacific—afterwards branching out into four trunk lines, all running in a

westerly direction to Colonia Alvear, Luiggi, Telen, and Toay respectively. A branch from the last-mentioned line joins the B.A. Great Southern and B.A. Midland at Carhué. The company controls the B.A. Midland jointly with the B.A. Great Southern. A joint underground passenger interchange station with the former Anglo-Argentine Tramway Company (now part of the Buenos Aires Transport Corporation) enables travellers from the suburbs of Buenos Aires on the 22 miles of electrified lines to reach the business centre of the city rapidly.

About 50 per cent. of the goods traffic is grain and linseed, 20 per cent. general merchandise, and the remainder hay, wood and charcoal, flour and bran, and other products. The livestock tonnage is exceeded only by that of the B.A. Great Southern. The bulk of the passenger traffic is derived from the electrified suburban lines in Buenos Aires, which have shown striking development in recent years. Apart from the oil company at Comodoro Rivadavia, practically the whole of the investment income of the B.A. Western is the return from holdings in the Central Argentine and B.A. Great Southern Railways, which account for nearly 20 per cent. of the total net revenue.

### Central Argentine

One of the most important railways in the country, this company owns 3,700 miles of broad-gauge line and is the amalgamation of the former Central Argentine Railway, which ran from Buenos Aires to Rosario via Pergamino, and thence to Córdoba, and the Buenos Aires—Rosario Railway, which ran to Rosario via Campana, and thence to Tucumán. In 1902 the two lines were merged by Act of Parliament, but the fusion was not approved by the Argentine Congress until 1908, when the new company took the name of Central Argentine Railway. The line serves five Argentine provinces and connects the Federal Capital with the provincial capitals of Santa Fé, Córdoba, Santiago del Estero, and Tucumán.

The total passenger traffic far surpasses that of any other company. Apart from participation in the international traffic to Bolivia in conjunction with the State railways from Tucumán to the frontier, the Central Argentine transports a long-distance passenger traffic to the holiday resorts in the Córdoba hills. The 44 miles of suburban lines are all electrified, and have been the chief factor in the remarkable growth of residential towns near Buenos Aires during the last 10 years.

The company is the principal railway serving Rosario, the second largest grain export port in the world, of which the throughput is exceeded only by Montreal. It is the premier carrier of maize, which represents about 33 per cent. of the goods tonnage; wheat accounts for 24 per cent.; linseed 5 per cent.; sugar from Tucumán 5 per cent.; and wine from Mendoza and San Juan through interchange junctions with the B.A. & Pacific, about 2 per cent. There are few investments in subsidiary undertakings beyond holdings in the Villalonga Express and Catalinas Warehouses & Moles companies.

### Buenos Ayres & Pacific

The company was formed in 1882, with about 650 miles of broad-gauge line. Situated between the B.A. Western and the Central Argentine, the line, which ran originally from Buenos Aires to Villa Mercedes, had little opportunity for extension, as the territory from Villa Mercedes onwards was occupied already by another British company—the Argentine Great Western. The disability was overcome by acquiring other interests. The Villa Maria & Rufino and Bahia Blanca & North Western railways were taken over, but the latter was transferred subsequently to the B.A. Great Southern. Later, the B.A. & Pacific gained control of the Argentine Great Western, of which the main line runs from Villa Mercedes to Mendoza, and, by completing the construction of the Argentine Transandine metre-gauge line from Mendoza to the Chilean frontier, established the first transcontinental railway in South America. Another acquisition was the section of the government-owned Andine Railway from Villa Mercedes to Rio Cuarto. The remaining section, from Rio Cuarto to Villa Maria, was purchased by the Central Argentine. The Argentine Transandine Railway was sold to the government recently and the B.A. & Pacific system is now confined to the B.A. & Pacific proper, the Argentine Great Western, and the Villa Maria & Rufino. Though operated as one railway, all three companies retain their identity and separate finance.

The B.A. & Pacific operates 2,771 miles of broad-gauge lines, but owns 1,540 miles only. Statistics of combined operations show that 21 per cent. of the receipts are derived from passenger train traffic, 69 per cent. from goods, and 6 per cent. from livestock. The B.A. & Pacific is not a heavy passenger carrier, but it is an important goods line. It has the advantage of diversity of traffics. Like all the trunk lines, wheat carryings are considerable, and one-fifth of the total tonnage is maize, but the largest single item of income arises from the vineyards at Mendoza and San Juan. No less than 35 per cent. of the goods receipts emanate from that quarter. In recent years, another valuable source of revenue has developed from the oilfields at Mendoza, and the already impressive figures of output may be expected to advance notably as soon as drilling and refining equipment can be obtained from overseas. Grapes and other fruit from the Andine provinces contribute materially to the weekly traffics, and, altogether, the line has the great advantage of a broadly-based income.

Investments outside the business are not considerable. Probably the most valuable are the participation in the joint oil company at Comodoro Rivadavia and the holdings in the Catalinas Warehouses & Moles Company.

#### *Argentine Great Western*

Constituted in 1887 to take over a broad-gauge line constructed for the Argentine Government from Villa Mercedes, the terminus of the Buenos Ayres & Pacific, to Mendoza, with an extension north from that city to San Juan, branch lines added since have brought the total length up to 1,090 miles. The company serves three of the provincial capitals—Mendoza, San Juan, and San Luis. Since July, 1907, the B.A. & Pacific has managed the line and undertakes to pay the annual interest on debenture stocks as well as interest on preferred and ordinary shares under varying conditions. The Pacific company's line from Justo Daract to La Paz is of great advantage in working the important wine traffic from Mendoza, as, in addition to providing another set of metals, it avoids the steep gradients on the Argentine Great Western main line. An extension from Guadales, on the San Rafael branch, to Buena Esperanza, on the B.A. & Pacific, forms an alternative route between the provinces of Mendoza and San Juan and the capital of the Republic. This line also connects those provinces with the south of the Province of Buenos Aires and with the Atlantic port of Bahia Blanca. The predominating traffic is wine, but in recent years, the oilfields at Mendoza have added appreciably to the company's earning power.

#### *Villa Maria & Rufino*

This company was formed in 1888 to construct a broad-gauge line from Villa Maria on the Central Argentine to Rufino, on the B.A. & Pacific, a distance of 141 miles. The line was worked originally by the B.A. & Pacific, under an agreement which expired in 1898, when the company itself took over the management. In 1900, a fresh agreement was made with the B.A. & Pacific Company, which was superseded in 1905 by a new contract, under which the Pacific company works the line and undertakes to pay rent equal to debenture interest and varying rates of dividend on the preferred stocks.

#### *Bahia Blanca & North Western*

Formed in 1889 to acquire a concession granted by the Argentine Government to construct 750 miles of broad-gauge line from Bahia Blanca to Toay, thence branching off in one direction to Villa Mercedes—the terminus of the Buenos Ayres & Pacific—and in another direction of Rio Cuarto to connect with the Andine Railway (subsequently bought by the Central Argentine and B.A. & Pacific companies), the railway was constructed from Bahia Blanca to Toay, but the further extensions were not built. In 1904, the B.A. & Pacific arranged to work the line and guarantee capital and interest under varying conditions. Large additions were made to the original system, and a new trunk line was built from Nueva Roma to Huinca Renaró on the B.A. & Pacific, with various short branches, after which considerable development took place throughout the region. In Bahia Blanca, additional traffic facilities were provided and extensive works were undertaken at the port to cope with the increased business. In 1924, the B.A. Great Southern took over the obligations of the B.A. & Pacific Railway, and the company now forms part of the B.A. Great Southern system.

#### *Buenos Ayres Ensenada & South Coast*

Constituted as a company in 1888, it owns 109 miles of broad-gauge line from Elizalde, near La Plata, to Magdalena and Las Pipinas, with a short branch to Atalaya. An extension of 33 miles from Elizalde to Vergara was opened in 1914. The line is worked by the B.A. Great Southern on the basis of the same rate of expenses to receipts as is applicable to the operating company. Both capital and revenue accounts reveal considerable debit balances, which have been financed by the B.A. Great Southern.

#### *Entre Rios Railways*

This standard-gauge (4 ft. 8½ in.) company and the Argentine North Eastern constitute the only standard-gauge British-owned railway system in Argentina. It was formed in 1891 to take over a portion of the present lines from the government of the Province of Entre Rios, and the construction of several extensions brought the total length up to the present figure of 108 miles. One of the principal lines traverses the province from Paraná, the capital, to Concepción del Uruguay. Another important section starts from Concordia, where it joins the Argentine North Eastern, and runs southwards to Ibicuy, whence, by means of a train ferry, the line connects with the Central of Buenos Aires Railway at Uriburu (formerly Zárate), over which it has running powers to Buenos Aires. To obtain a port and central terminal in the capital, the company acquired a valuable site of 26 acres, with frontage on the river Riachuelo and close to the B.A. Southern Dock, where a ferry terminal was constructed to provide full facilities for the transport of merchandise and produce to the docks and commercial centre of Buenos Aires from Entre Rios, Corrientes, and Paraguay without transhipment. In conjunction with the Argentine North Eastern and Paraguay Central railways (both standard-gauge British companies) and by means of another train ferry across the river Paraná from Posadas to Villa Encarnación, the company maintains a through service between Buenos Aires and Asunción, the capital of Paraguay. To promote close association with the Argentine North Eastern, the Entre Rios Railways acquired nearly £1,000,000 of stock in the former company, and both lines are operated as one system. About a quarter of the receipts are derived from passenger train traffic, and, on the goods side, 16 per cent. is contributed by oranges, 14 per cent. and 10 per cent. emanates from linseed and wheat respectively, and 23 per cent. from general merchandise. The tonnage of livestock and other products of the country is considerable.

The international passenger service, in which the Entre Rios Railways are the principal partner, enables tourists from Argentina to travel most of the journey to the world-famous Iguassú Falls by rail. The falls are located at the point where the three Republics of Argentina, Brazil, and Paraguay meet.

#### *Argentine North Eastern*

The company dates from 1887 and owned originally two standard-gauge lines starting from Monte Caseros in the province of Corrientes, one of which runs to Corrientes, the capital, and the other in a north-easterly direction to Posadas. In 1905, the company acquired the East Argentine Railway, which runs from Convordia to Monte Caseros, and 150 miles of extensions were built subsequently. The present total length is 753 miles. In addition to Posadas, the company serves the port of Concepción del Uruguay, on the river Uruguay, which is available for ocean-going steamers. The principal traffics are oranges and yerba maté, known in England as Paraguayan tea, which is consumed widely throughout the agricultural regions of Argentina. International passenger traffic is an important item of revenue, but the zone produces little grain, nor is the livestock tonnage considerable, but general merchandise to the land-locked republic of Paraguay contributes substantially to the weekly traffics.

#### *Buenos Ayres Midland*

The only metre-gauge line still in British ownership, this company was formed 40 years ago to construct 322 miles of line from Barracas al Sud, a suburb of Buenos Aires, to Carhué, a junction on the B.A. Great Southern and B.A. Western railways, which companies operate the Midland jointly and guarantee the debenture interest and all other income charges, as well as £60,000 a year for dividends on share capital.



## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### New Third Class Coaches, L.M.S.R.

London Midland & Scottish Railway Company,  
Headquarters, Watford,  
Herts. October 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—The comments by "East Anglian" in your October 18 issue on the accommodation provided in the new L.M.S.R. corridor carriages used on long-distance trains come as refreshing fruit to those who receive a steady flow of criticism of the conditions of some of the present meagre, war-worn stock.

He omits to mention that the arm rests fold flush with the seat backs so as to provide 56 seats per coach if required. The use of retractable arm rests, if the number of passengers is less, is a reasonable facility for the passengers on the trains for which the carriages are built.

It is surprising, however, that "East Anglian" suggests that the use of light constructional materials might be explored in order to reduce the weight. The steady progress in this direction already effected by the L.M.S.R. by the means it is suggested the company should adopt, surely is well known. Weights have been reduced simultaneously with increased comfort to passengers and increased safety in working. They would probably have been reduced further in the present lot if certain other materials were available and their price was reasonable. A saving in running costs exceeded by a greater increase in the interest and maintenance costs is not an economy.

Yours faithfully,

R. A. RIDDLES,  
Vice-President

### Railway Rates and 20-Ton Wagons

Eynesbury, St. Neots.  
October 7

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—At the inquiry into railway charges, it was stated that the railway companies had no part in the initiation of the inquiry, which was promoted by the Government, as it is anxious to increase rates and fares. It may, therefore, be of interest to mention that the railway companies' financial troubles originated from the exaggeratedly high increase in charges granted by a Government-sponsored committee and the Railway Rates Tribunal in 1922, which forced traffic in ever-increasing volume on to the roads and created a huge commercial motor and private-car traffic—with the result that the railway companies could never earn the full standard revenue which had been fixed.

If the committee had foreseen these results, it never would have fixed charges at so high a level. The companies would have retained their traffics—which would have increased greatly—and so earned their standard revenue.

Among the purposes of the committee was the revision of the classification, and the elimination of millions of special rates by reducing them to a simple mileage scale. This committee was composed, principally, of the representatives of industrial concerns who were neither experienced in the operation and economics of railway transport, nor in the fixing of railway rates at home, let alone abroad. Their only guiding light

was that, as railway wages had been increased by 100 per cent., rates and fares should be raised by a corresponding amount.

The committee thus much resembled a shipload of theorists and cranks who had set out on a voyage of discovery with only two or three experienced railwaymen among them (who, no doubt, often were overruled by the weight of numbers of the rest) who probably understood the compass and the ropes. After a protracted voyage and many creakings and groanings, they eventually descried on the distant horizon what they hailed as the Promised Land, which they promptly dubbed by the suggestively sacred title of The Appointed Way—a point which, in fact, was nothing more nor less than the place they had started from.

Having fixed charges at far too high a level, the Railway Rates Tribunal has ever since been engaged in entertaining application for reductions in an astronomical number of individual rates—with the result that millions of special rates now once again figure in the books!

But if the committee had understood railway operation properly, instead of raising charges, the first thing to do would have been to call upon the Government to implement its promise to abolish, or place under the railways' operating control, all privately-owned wagons—from which very heavy economies would have been secured.

The committee's next, or complementary, step should have been to replace these wagons—over 80 per cent. of which had already exceeded their normal lifetime of 20 years—by 20-ton wagons, which Royal Commissions had urged should be done. Obviously, if the present wagons had been replaced by one-half the number of 20-tonners, all operating expenses—shunting, train-mileage, weighing, labelling, number taking, repairs, tipping, and so on—would have been reduced correspondingly. These two factors thus probably would have enabled rates and fares to be reduced even to below 1914 levels, and the chaotic conditions which have existed since in British transport would have been avoided.

Yours faithfully,

E. R. B. ROBERTS

### Transport to the E.C.I.T.O. Prague Conference

E.C.I.T.O./O.R.M.O.A., Italy.  
A.P.O. S551, C.M.F.  
October 1

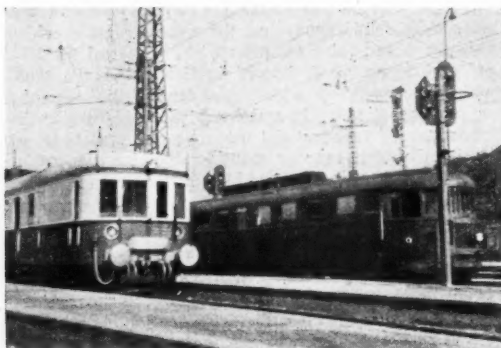
TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—In connection with the recent series of meetings held by E.C.I.T.O. (European Central Inland Transport Organisation) at Prague, I enclose two pictures which may be of interest to your readers. The first shows a German diesel car (left) which conveyed the delegates from the U.S. Zone of Germany, standing side by side in Prague Station with an Italian State Railways Fiat diesel car which conveyed the delegation from the E.C.I.T.O. office in Rome.

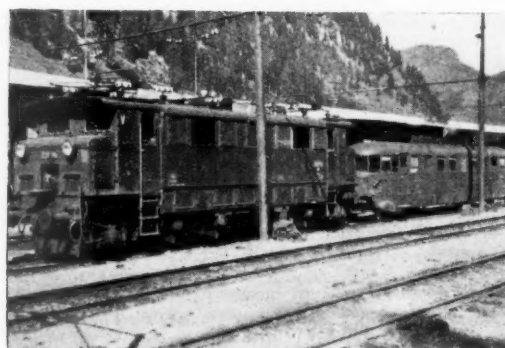
The second picture shows the Italian diesel car standing in Brenner Station, after having been hauled from Innsbruck by an Austrian State Railways electric locomotive. It also may be of interest that the Italian vehicles achieved the speed of 106 km.p.h. on sections of the journey between Kufstein and Furth-in-Wald, via Munich, Regensburg, and Schwandorf.

Yours faithfully,

A. C. PING,  
Lt.-Colonel



German and Italian diesel cars at Prague, conveying delegates to the E.C.I.T.O. conference



Italian Fiat diesel car hauled by Austrian electric locomotive at Brenner Station

## The Scrap Heap

### A HUNDRED YEARS AGO ON THE NORD

Railway journeys a hundred years ago no doubt raised many speculations in the minds of intending passengers. A series of humorous drawings published by the French National Railways Company on the occasion of the centenary of the Northern Railway of France in June this year, reflects some of these surmises and apprehensions. We reproduce herewith three of the drawings, which are by M. Maurice Drouart, of the Northern Region Administration, French National Railways Company.

### NEXT WEEK'S RAILWAY CENTENARIES

Lynn to Downham Market (10½ miles). Lynn & Ely Railway, opened October 27, 1846.

Lynn to Narborough (8½ miles). Lynn & Dereham Railway, opened October 27, 1846.

### 100 YEARS AGO

From THE RAILWAY TIMES, October 24, 1846

**COCKERMOUTH and WORKINGTON RAILWAY.**—Wanted, an efficient SECRETARY, experienced in Railway Management; he must be competent to perform the duties of Secretary and Accountant, and to act as Superintendent on the opening of the line. Salary, £300 per annum. Satisfactory references and security will be required.

Applications to be addressed to Mr. G. H. Barnes, Secretary to the Company, on or before the 26th inst. Cockermouth, October 13, 1846.

**COCKERMOUTH and WORKINGTON RAILWAY.**—The Directors are ready to receive Tenders for the supply of six Turntables, two Cranes, and three Weighing Machines, to weigh coals and goods. Parties desirous of tendering may do so for all or any part of the above, to be delivered at Workington by the middle of December next.

Full particulars may be had at the Engineer's office, Cockermouth, on and after the 20th instant.

Tenders, addressed to the Secretary, must be sent in not later than the 31st October instant.

By order,

G. H. BARNES, Secretary.

Railway Office, Cockermouth, October 9, 1846.

### NAMED PASSENGER TRAINS IN CANADA—2

Name	Railway	Scheduled run
New Englander	C.N.R.: (C.V.: Montreal—Boston B. & M.)	
Northland	C.N.R.: Ontario Toronto—North Bay—Timmins	
Ocean Limited	C.N.R. ...	Halifax—Montreal
Ontario Limited	C.N.R. ...	Toronto—Detroit
Overseas	C.P.R.: (N.Y.C.)	Montreal—Chicago
Royal York	C.P.R.: (N.Y.C.)	Montreal—Toronto—Chicago
Scotian	C.N.R. ...	Montreal—Halifax
Toronto Express	C.N.R. ...	London—Toronto
Viger	C.P.R. ...	Montreal—Quebec
Washingtonian	C.N.R.: (C.V.): Montreal—B. & M., N.Y., N.H. & H., Pennsylvania)	Washington
Winnipeg	C.P.R.: Soo ...	Winnipeg—Minneapolis

### BROOCH FOR "GOLDEN ARROW" PASSENGER

The hundred-thousandth passenger to travel on the Southern Railway "Golden Arrow" boat train since its restoration on April 15 was presented with a commemorative brooch when she passed through the barrier at Victoria Station on October 11. She was Mrs. John Scott, daughter of Sir Bernard Spilsbury, the pathologist, who was on her way to Paris. The brooch was a replica of the Golden Arrow symbol carried on the coaches of the train, and was handed to her by Mr. G. Wynne Davies, Assistant Public Relations & Advertising Officer, Southern Railway. Her passport was examined at the barrier by Mr. A. T. Chapman, Stationmaster at Victoria.



"I hope you don't mind my smoking"



"I don't believe in trains. You may go all right, but are you sure of coming back?" "We're all right. We've bought return tickets"



"Any more steaks to roast before Amiens?"

## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### CANADA

#### C.P.R. Wage Increases

In a brief submitted to the National War Labour Board on September 25, the Canadian Pacific Railway Company opposed the application from a large section of its employees for a 10 cents an hour wage increase. The company urged that the proposed increase "should be deferred until some effective steps are taken by all competent authorities to assure the company the revenues it so urgently requires."

The increase asked for corresponds to a 10-cent wage increase granted by the C.N.R. to approximately 115,000 of its workers last August. The agreement between the Canadian National Railways and its various labour organisations called for an increase for maintenance of way men of 8 cents an hour, and of all other workers of 10 cents an hour, effective as from June 1, 1946. Such an increase, the C.P.R. brief said, would increase the company's operating payroll by \$15,300,000 a year. Pointing out that it was estimated that net earnings from railway operations for 1946 would be \$15,000,000, or 42 per cent. less than in 1945, and that the picture for 1947 was even more gloomy, it was stated that "in such conditions the company would have no option but to make drastic reduction in the number of its employees."

#### Application for Higher Rates

The Railway Association of Canada, on behalf of its 23 member companies, has applied to the Board of Transport Commissioners for authority to make a general advance of 30 per cent. in rates at present charged by them in respect of all freight traffic (where such rates come within the jurisdiction of the board) carried on their lines in Canada. Application has been made also to the Wartime Prices and Trade Board for concurrence in the increases when they are approved by the Board of Transport Commissioners.

The application submits the following plan for increased freight rates within Canada:—

Increase all freight rates, except on coal and coke, by 30 per cent.

Increase freight rates on coal and coke from 20 cents to 40 cents a ton according to the present basic rate.

In support of its application, the Railway Association of Canada submits that Canadian railway companies are in the unique and perilous position of operating under rigidly controlled freight rates in the face of steadily mounting costs, not merely since the adoption of price control in 1941, but since the outbreak of war. In contrast, there has been an enormous increase in railway operating costs. The effect of the cumulative increases in wages, exclusive of the wage increase of 10 cents an hour recently granted by two member roads, and in prices of materials since 1939, will be to increase the railway operating costs in 1946 by \$79,200,000 for wages and \$52,800,000 for materials, a total of \$132,000,000 more than would have been the case had the 1939 levels of wages and prices prevailed.

The average increase in wage rates, without the wage increase of 10 cents an hour already referred to, has amounted to 27.5 per cent. Examples of percentage increases in unit costs of materials as at May 1, 1946, compared with those of 1939 are: sleepers, 94 per cent.; fuel, 62

per cent.; lumber, 58 per cent.; steel rails, 32 per cent.; steel generally, 20 per cent.; and other materials, 24 per cent.

The application points out that the Central Vermont Railway, Michigan Central Railroad, New York Central System, Pere Marquette Railway, and Wabash Railroad Company, all of which operate lines in Canada and are members of the Railway Association of Canada, have, with the approval of the National War Labour Board, granted to their Canadian employees, as from January 1, 1946, wage increases that were awarded to their United States employees. With like approval, two Canadian railways have granted a general wage increase to all occupational classifications of their employees, except trainmen, amounting to 10 cents an hour, effective from June 1, 1946, and this increase is currently being paid. Seven other member companies of the association are now faced with an application for similar increases in the wages of their Canadian employees.

An application has been filed with, and is now pending before, the National War Labour Board on behalf of the trainmen's organisation for an increase in wages of 25 per cent. This application affects nine of the association's member companies, including the Canadian National, Canadian Pacific, and the Ontario Northland Railway.

The submission further states that, assuming the trainmen's application for a wage increase is disposed of on the basis of the 10 cents an hour awarded the other employees of the two member roads previously referred to, and that all the other member companies are required to grant similar increases in wages to all their employees, retrospective to June 1, 1946, there will have been added to the 1946 operating payroll of all of the companies affected an additional amount of \$23,200,000.

### UNITED STATES

#### Decline in Military Traffic

Troop movements on the railways are decreasing substantially, and since last December have declined 77 per cent. In July, 1946, the last month for which figures are available, 248,421 service personnel and prisoners of war were transported by rail in organised movements, as compared with a total of 1,087,300 in December, 1945. To handle the military traffic in July, the railways ran 260,953,700 passenger-miles, or 80 per cent. less than last December. Partly because of the falling off in military movements, passenger traffic on the railways has dropped considerably, with passenger-miles in July about 30 per cent. less than in the same month of 1945.

#### Relieving the Wagon Shortage

Increasing industrial output and record farm crops are aggravating the effects of the wagon shortage now being experienced by the railways. Mr. John R. Steelman, Director, Office of War Mobilisation and Reconversion, stated recently that the railways are carrying more goods now than they moved before the war, and with one-third fewer wagons. About one-third of the wagons now in service are more than 26 years old and subject to frequent breakdowns.

Various measures are being taken to relieve the shortage. Wherever possible,

for example, cross-country goods will be diverted from the railways to water transport, and meanwhile the Civilian Production Administration is to accelerate the supply of materials needed to repair about 80,000 old wagons and to build 40,000 new wagons this year. The State Department is seeking to speed up the placing of orders for wagons to be built abroad next year.

The estimated demands for wagons in the middle of October is for one million loadings a week, and about 925,000 unloadings weekly is the best that the railways may be expected to do.

### BRAZIL

#### Modernisation of Transport

On the occasion of a recent visit to the U.S.A., Colonel Edmundo Macedo Soares e Silva, Brazilian Transport Minister, outlined in an interview with the press the details of his plan for the re-equipment of railways and the opening up of new roads in Brazil. He stated that his plan is spread over five years and involves some \$200 million, principally for the modernisation and improvement of railways, the building of new roads, and the development of national shipping.

The Minister stated that the Brazilian transport system had deteriorated considerably during the war, due in no small measure to the heavy traffic of equipment for the war effort of the United Nations, and the consequent congestion in zones of production had given rise to serious inflation in prices of food products in the consuming centres. The plan included the purchase of 110 locomotives, 7,000 goods wagons, 42,000 tons of steel rails, 2,500 tons of steelwork for bridges, and much equipment for the renovation of railway rolling stock workshops.

Colonel Macedo Soares made several journeys to New York, Chicago, Detroit, and other industrial centres, and on being informed that all orders could be delivered by the middle of 1948, he stated that once the credit expected from the Import and Export Bank was confirmed, orders would be placed immediately by the Brazilian Government with all the manufacturers with whom he had made contact.

### VICTORIA

#### Railway Plans to Serve New Coalfields

Plans for mining brown coal now being considered by the State Electricity Commission are likely to necessitate considerable changes to the railway system in Gippsland. It is probable that a long section of the main line from Melbourne to Bairnsdale will have to be deviated to permit the development of the coalfield, and other works will be necessary to improve grading and facilitate handling the coal traffic. It has been decided already to close the branch from Herne's Oak to Yallourn by 1954. Yallourn will then be served by a new line from Moe, which probably will be extended later to rejoin the main line at Traralgon. Construction of a branch from the main line at Yarragon to Athlone is also being considered. This scheme, in conjunction with improvements to the existing route between Athlone and Dandenong, would enable traffic to by-pass the present Yarragon—Dandenong section of the main line, which has a ruling gradient of 1 in 50. West of Dandenong, an additional track or long loops will be required as far as Caulfield, two additional tracks



between the Cremorne Bridge and Flinders Street Yard, and other lines in the outer suburban area to give better connections with the briquette depots which the State Electricity Commission may need to establish.

The development of the brown coal resources of Victoria was recommended in a report published recently by a Cabinet sub-committee. Other suggestions in the report were that the railways should use brown coal in locomotives instead of New South Wales black coal, and that the Newport power station should operate exclusively on brown coal. An investigation into the use of brown coal as a locomotive fuel in Germany has been carried out this year by Mr. W. O. Galletly and Mr. W. H. Chapman—two engineers of the Railways Department—who completed their studies on June 22 after 7½ weeks in the country, during which they covered some 6,000 miles.

## INDIA

### Rolling Stock Still with Army

Though there has been some decline in military traffic handled by Indian railways, large movements of military personnel and stores are still taking place. There has, therefore, been no great improvement in the wagon position, and the shortage of passenger accommodation is still acute. The Chief Commissioner of Railways, Lt.-Colonel R. B. Emerson, recently explained that some 1,000 passenger vehicles, representing approximately one-eighth of the total stock, were still with the army, who under the demobilisation programme were moving 100,000 men a month. This situation was expected to continue until April, 1947. The release of railway stock by the army has begun, but is still very slow; 48 coaches were returned in June; a similar number in July; and 24 in September. One railway, however, the B.B. & C.I.R., is already back to its pre-war position in passenger coaching stock.

## SOUTH AFRICA

### Developments at Vereeniging

The steel industry at Vereeniging and Van der Byl Park, other industries, and the nearby coal mines, have combined to cause a considerable increase in railway traffic in recent years. Goods traffic rose from 876,000 tons in 1941 to 1,250,000 tons in 1944. To provide for immediate requirements and for future expansion, the administration has set aside more than £2,000,000 for the post-war reconstruction programme of new works at Vereeniging.

Faster and more frequent trains will be introduced after the doubling and electrification of the two direct routes that link Vereeniging with the Rand. The original main line to Union provides Vereeniging with direct access to the Germiston and East Rand industrial and residential areas; and that through Midway and Langlaagte communicates with Johannesburg and the West Rand. The total cost of doubling the line, electrification and other improvements, including the construction of a goods avoiding line linking the two Rand-Vereeniging routes just north of Vereeniging, and thus relieving Vereeniging station of handling goods traffic, will be more than £1,100,000.

### New Marshalling Yard

The reconstruction programme provides for the construction of a new marshalling yard four miles north of the existing station, and for remodelling of the present

station yard. Under the new scheme the station yard will be used solely for goods traffic. A new passenger station will be built and will be equipped with modern passenger and catering facilities and new and more spacious platforms. The total cost of the new station and the remodelling of the yard will exceed £165,000.

The current programme includes £140,000 for Houtkop, the nearest point on the line to the steelworks at Van der Byl Park. Houtkop is to be developed as a station with its own marshalling yard and a steel stores depot for handling steel despatched from the works.

### Bridging the Vaal River

At the same time, rail communication between the Vaal and the north-western Free State will be improved by construction of a new bridge over the Vaal River at Vereeniging, since the existing bridge does not meet present-day requirements. It is, therefore, necessary, particularly in view of the extensive developments which are expected at Vereeniging and in the north-western Free State, to replace it with a modern double-track bridge further downstream.

The erection of the new bridge will necessitate deviation of the Free State main line between mileposts 664 and 665 to allow construction of a direct line from the main line to the proposed new marshalling yard at Vereeniging. The total cost of replacing the bridge and deviating the line is estimated at £317,500, for which provision has been made in this year's estimates.

## ITALY

### Proposed Cut-Off to Switzerland

A scheme for a new railway connecting Italy with Switzerland was discussed at an Italo-Swiss traffic conference which opened at Aosta on August 9. The new railway line would run from Aosta (on the electrified branch from Chivasso to Pré St. Didier) to Martigny, the southernmost station on the Montreux-Brigue main line, passing under the Great St. Bernard Pass in a tunnel. The distance from Aosta to the Italian

frontier would be approximately 22 miles, and on to Orsières, another 15½ miles. Orsières is the terminus of an electric standard-gauge line to Martigny, a distance of 12½ miles.

The new line would shorten considerably the route from France to north-western Italy via Vallorbe and Lausanne, avoiding the roundabout route through Brigue, as it would run almost due south from Martigny. An alternative scheme contemplates the building of an improved motor road between Aosta and Orsières. The road would include a tunnel under the Great St. Bernard Pass, replacing the present motor road, which reaches an altitude of 8,110 ft. in order to cross the Alps.

## CZECHOSLOVAKIA

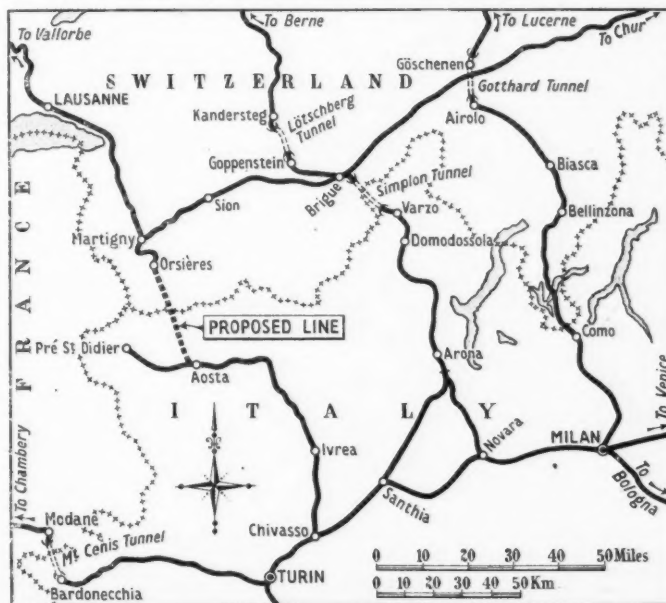
### New Line to Russian Frontier

It is reported from Prague that work has begun on construction of a new line, about 18 miles long, from Podolinec to Orlov-Plavec, on the frontier with Russia. Podolinec is the present terminus of a branch off the main line from Zilina to Kosice. There is an existing connection from this main line to Orlov-Plavec, but it entails a considerable detour for traffic coming from the Zilina direction. The new link will effect a saving in distance of some 70 miles.

## FRANCE

### Road Service between Paris Stations

The S.N.C.F. announces that it has organised a road service between the Nord and the Austerlitz terminal stations in Paris. A car leaves the Gare du Nord at 7.10 p.m., arriving at the Gare d'Austerlitz at 7.40 p.m. In the opposite direction, a car leaves the Gare d'Austerlitz at 10.30 a.m., arriving at the Gare du Nord at 11 a.m. The fare is fr. 30. This service is intended specially for passengers arriving from England and proceeding to the South-West of France, or vice versa. The Paris press is already urging that similar services should be provided between other terminals.



Proposed railway under the Great St. Bernard Pass, shown in relation to existing Alpine tunnels

## The Work of Their Craft\*

*Mr. F. S. Whalley on the evolution and design of the "Liberation" locomotive for the Continent*

THE title of my address is a phrase occurring in the Book of Ecclesiasticus, and I chose it as I hope to interest you this evening by describing some of the work that is the result of skill or craft in the design and production of a locomotive recently put into service, to which the name "Liberation" class has been given.

In the early stages of the war the Ministry of Supply ordered a number of 2-8-0 locomotives of the L.M.S.R. class "8F," which were built by various locomotive manufacturers and in the workshops of the other British railways. In 1942, when additional locomotives were needed urgently for general duties, the "Austerity" 2-8-0 was designed, with a 15½-ton axle load and a tractive effort of 34,216 lb.; the first of the class appeared in January, 1943.

In June of that year, however, the Locomotive Manufacturers' Association was asked by the Ministry of Supply to design a post-war type for the Continent, with greater power than the "Austerity" locomotive. The main requirements were: 2-8-0 or 2-8-2 type; boiler with steel firebox and wide grate to burn Continental coal; grate area, 40-50 sq. ft.; tractive effort, 40,000-50,000 lb.; axle load, 18-20 tons; boiler pressure, 225 lb.; wheelbase for curves of 100 m. (330 ft.) radius; and conformity with Berne "International" loading gauge.

### Early Planning

A meeting was arranged in October, 1943, by the Ministry of Supply with the Technical Advisory Committee on Inland Transport (T.A.C.I.T.) of the Allied Post-War Requirements Bureau, representing France, Belgium, Holland, Czechoslovakia, Poland, Greece, and Luxembourg. A questionnaire was prepared to test the preference of various representatives for alternative forms of design or equipment. It was decided ultimately that:

(a) The wheel arrangement should be 2-8-0, with double-bogie tender.

(b) Simplicity of manufacture and ease of maintenance were of paramount importance, and that regard must be had to the ready availability of materials in this country.

(c) Metric dimensions be adopted, except in details of proprietary manufacture.

(d) The International Standards Association system of tolerances (hole basis) be adopted.

(e) Screwed details be made to 'metric' diameters, but with British Standard fine threads (already commonly used on the Continent); metric dimensions be used for the bodies of bolts and studs, but that their screwed portions be made to British diameters with B.S. fine threads.

Without a detailed specification, the builders were in an unusually free and happy position to concentrate on the design of details with a keen eye to simplicity and ease of manufacture in the shops, and to incorporate those features (irrespective of their country of origin) which were considered the best practice for the duty which the locomotive would be called upon to perform.

It was essential, however, that the prestige of locomotives of British design and

build should be at the highest level. The locomotives must evoke no unfavourable criticism on arrival at their destinations, and must, so far as possible, give the Continent what it wanted and what it was used to. To accommodate a wide firebox above the trailing wheels, the boiler centre was pitched 10 ft. above rail level—a height made possible only by the Berne loading gauge. As first designed, the superheater (32 elements) was criticised as being too small. Originally, with a heating surface of 580 sq. ft., i.e., 24 per cent. of the evaporative heating surface, a steam temperature of 600-650° F. would have been attained. The superheater, therefore, was enlarged to 36 elements, to give a steam temperature of 700° F., and the superheating surface increased to 60 sq. ft. (29 per cent. of the evaporative surface).

A boiler of 6 ft. 3 in. dia. was required which necessitated a round-topped firebox; a parallel barrel was decided on, with diagonal staying for the smokebox tubeplate and firebox backplate, and full radial staying for the firebox. Although the firebox was intended originally to be of steel, most of the Continental engineers favoured a copper firebox (contrary to expectation), the adoption involving an increase in coupled-axle loading to 18½ tons.

The firebox follows American practice in its radial spaced roof-stays; flexible stays with welded cups were used for the first three rows of roof-stays and for the water-space stays in the breaking zone. Three arch tubes are fitted, with washout plugs of American pattern in the throat and back plates; the plugs are screwed in special seatings designed to prevent damage to the threads by wash-out tools when the arch tubes are being cleaned.

The washout doors are of a pattern much used on the Continent and were standard on the German State Railways. They consist of a drop-forged seating of circular form welded into the boiler, which houses the conventional oval washout door. The joint between door and seating is made with a copper asbestos joint ring. The design provides a flat seating irrespective of the location of the washout door in the boiler. The doors are bedded to their seatings on the fitting bench before the seatings are welded to the boilers. All doors and seatings are interchangeable.

At the unanimous request of the Continental engineers, a single-seated balanced regulator with pilot valve was designed specially and substituted for the vertical slide-valve regulator originally proposed. The regulator gearing is of American "push-pull" type with serrated quadrant, and the L.N.E.R. type of balanced stuffing box is fitted on the firebox back plate, to eliminate end thrust of the regulator rod and to secure easy and sensitive operation. The rocking grate is arranged in two longitudinal sections, each independently operated by hand. The rocking bars are of American pattern with separate finger bars. Bar frames were considered seriously, but because of the limited facilities in this country for producing them, plate frames were adopted.

The cast steel axlebox guides as originally designed had no wedges, to simplify manufacture. To meet the wishes of French and Polish representatives, however, the guides finally were arranged so that wedges could be fitted by any railway

desiring them, and the locomotives destined for Luxembourg were sent out with the wedges fitted. The cylinders have been designed as symmetrical castings, interchangeable between right and left hand.

The casting has been kept as simple as possible, with machining operations reduced to a minimum. The cylinder dia. is 21½ in. and the stroke 28 in. The piston valve diameter, 12 in., is unusually large for cylinders of that size. As first designed, 11-in. piston valves were provided, and liners with rectangular ports, for operation in conjunction with valves having narrow rings—all on the lines of L.M.S.R. practice. The combination of rectangular ports and narrow rings, however, drew a strong objection from the Belgian engineers on the grounds that this combination had given great trouble in Belgium because of uneven wear and consequent breakage of the piston rings. The Belgians insisted on rhomboidal steam ports and on a steam port area one-seventh of the cylinder area. By careful design it was found possible ultimately to give the required ratio with a piston valve of 12 in. dia. in conjunction with rhomboidal ports designed to eliminate wear on the valve rings.

The tender, at first planned as an eight-wheel plate frame type, was redesigned as a double-bogie tender, for which the Continental engineers expressed a definite preference. The tank is of all-welded construction. It is to the bogies, however, that special interest attaches. After extensive investigation, it was decided to fit bogies with cast-steel one-piece side-frames incorporating the axleboxes, and cast-steel one-piece cross-bolsters of American pattern. The bogie design resembles that of the "austerity" 2-8-0s.

From the locomotive builder's viewpoint, the adoption of these bogies has been an unqualified success. There has been a considerable saving in weight, and the simplicity of the various shop processes and erection, in contrast to a tender built up of plate frames and including separate hornblocks, axleboxes, and spring beams, is most marked.

### Transport Problems

The "Liberation" locomotives were shipped from this country in the "completely erected" state. As they were too large for the British loading gauge, they had to be taken to Liverpool Docks by road. The road vehicles used had several interesting features, one of which was that steering could be assisted from a cab in the rear when necessary. On arrival at Gladstone Dock, hydraulic jacks—integral with the lorry—were used to lower to the ground the front end of the girder carrying the locomotive. The whole of the fore-carriage of the lorry was disconnected and run ahead, and a ramp was inserted between the rails on which the locomotive rested and the rails at the dockside. The locomotive then was hauled off by a winch. The s.s. *Empire Wallace*, used for the sea transport of these locomotives, took 7 engines and 25 tenders on deck and 23 engines and 5 tenders in the hold.

There we must leave the "Liberation" locomotives to continue their way in assisting the rehabilitation of Europe. Improvement and development of transport have been often quoted in the past as being among the best means of securing the settlement of a disturbed country. May the prestige of the British locomotive thus make its contribution to future prosperity on the Continent.

\* Abstract of presidential address by Mr. F. S. Whalley, M.C., delivered at a general meeting of the Institution of Locomotive Engineers in London on October 17, 1946.

## The Responsibilities and Problems of the Chief Mechanical Engineer\*

Mr. O. V. S. Bulleid on the importance of ingenuity in future locomotive design—A new Southern Railway locomotive

**E**ACH year the Chief Mechanical Engineer of the Southern Railway Company, like his colleagues on the other main-line railways, is asked to sign a certificate worded as follows:—

### CERTIFICATE RESPECTING THE ROLLING STOCK, ETC.

I hereby certify that the whole of the Company's Plant, Engines, Tenders, Carriages, Wagons, Road Vehicles, Machinery and Tools, under my charge, have, during the past year, been maintained in good working condition and repair.

The form of words indicates that the responsibility for keeping the company's locomotives, carriages, wagons, and road vehicles in good repair and in safe working condition is placed on the Chief Mechanical Engineer. This certificate is a statutory requirement and must be signed before the accounts can be passed by the auditors.

Professionally, the implications of such a certificate are highly important. If, for reasons outside his control, the stock could not be maintained to the standard the Chief Mechanical Engineer considered necessary, he could not sign a certificate in the form I have quoted. He should require an amended form of certificate to be prepared, so worded as to meet his objections. This has been recognised during World War II: the present certificate is worded as follows:—

### CERTIFICATE RESPECTING THE ROLLING STOCK, ETC.

I hereby certify that the whole of the Company's Plant, Engines, Tenders, Carriages, Wagons, Machinery and Tools, under my charge, have, during the past year, been maintained in good working condition and repair so far as has been possible having regard to the requirements of the Government and to the effect of the war.

The major responsibilities of the Chief Mechanical Engineer are to keep in service the largest possible percentage of the stock of locomotives, and to see that whilst in service the locomotives require as little attention as possible, and that no defects occur that would affect their timekeeping whilst working trains. His ability to achieve this depends upon the quality of the staff and equipment at his disposal.

On January 1, 1946, there were 1,847 locomotives, 8,068 carriages, 36,538 wagons, and 2,619 road vehicles in the Southern Railway's service, and the staff employed in the Chief Mechanical Engineer's Department of the Southern Railway numbered in all 10,158, exclusive of administration staff. No less than thirty-six trade unions, covering most trades, are represented in the workshops, and this is sufficient to show the variety of work done in the railway shops.

Taking an average week's figures, 5 per cent. of the total number of locomotives stopped are in the main works, and 10 per cent. in the running sheds. Failures in service in the case of locomotives are defined on the Southern Railway as:—

(a) An engine which has to come off its

train because of any mechanical or boiler defect, even if no delay is caused.

(b) An engine which, from mechanical or boiler defect, causes a delay to its train of 10 min. or over.

In 1938 the average mileage run per failure so defined was 131,264; the total number of failures was 353. Each failure is investigated with respect to design, materials, and workmanship as the contributory cause. The way the locomotive was handled in service, and when and why and how it was last repaired at a shed, are considered also.

As the figures quoted above follow from many years of sustained effort to obtain better results, it will be suggested inevitably that the accepted methods of design or construction cannot be expected to give substantially better results. That is to say, the results were as good as could be expected with the designs, materials, finish, and methods of operation which were used. So, if we are to reach a higher level of achievement in continuity of service, a new conception of the steam locomotive also is needed. Such thoughts caused us to question accepted ideas and forced us to investigate the locomotive as regards design, use, and servicing.

The very age of the steam locomotive has acted against its further development, for its bad features have come to be accepted as inherent and inevitable. It is these bad features which enable other forms of traction to compete with it, and consequently such features must be eliminated if the steam locomotive is to survive.

### Directions for Improvement

Here are some directions in which improvements can be effected:—

(1) The locomotive boiler, a wonderful evaporator of water, is troublesome to maintain, because it requires washing out about once in every ten days.

(2) The use of coal, especially inferior grades, also causes loss of service because the fires have to be cleaned frequently.

(3) As the mechanical parts cannot be relied upon to run from one general overhaul to the next, they have to be examined after relatively short mileages.

(4) The preparation of the locomotive for service is difficult and takes too long.

(5) The locomotives ought to be more convenient and comfortable, cleaner, and less fatiguing to drive.

(6) The disposal of the locomotive after service also leaves much to be desired, and the practice of letting the boiler cool and relighting it at short intervals is not only wasteful of fuel, but harmful to the boiler.

Before the recent war the general lines on which the problem should be attacked had become clear. All water used by locomotives throughout the system would have to be treated; otherwise the benefits obtained from the treated water would be lost as a result of the admixture of untreated water.

Hand firing of large coal would have to give place gradually to firing by mechanical stoker, and the locomotives ought to incorporate rocking and dump grates with hopper ashtrays. Oil fuel has many advantages, such as greater convenience, the longer distances that can be run without refuelling, and, above all, the absence of

sparks, cinders, ash, and smoke. In consequence of the drop in coal production, 1,217 of the railway companies' locomotives are to be converted to oil burning as quickly as possible. The fuel oil to be used is a heavy oil known as "bunker C," which so far has not been used successfully in compression-ignition engines.

Much greater mileages per day will be required from the future locomotive, necessitating a marked reduction in the time lost in preparing, taking fuel and water, cleaning fires, and dealing with ashes. The preparation of the engines, including oiling, ought to be transferred to shed staff specially trained for such duties, so that the fullest use might be made of the enginemens to drive trains.

The "Merchant Navy" class locomotives, the first to be built after these investigations were begun, which introduced innovations into English practice, and the later "West Country" engines, are to be regarded not as final designs, but rather as stages in locomotive development.

A wide range of research work is in hand. The more interesting investigations are those being carried out into new modes of stay-to-plate fixing in fireboxes, to ensure speed and economy in manufacture and longer life in service by prevention of seepage and plate cracking; photo-elastic stress surveys of axles; the effect of heat input and mechanical restraint upon welds in heat-sensitive steels, with the object of eliminating tyre slip in tyres applied by shrinking-on only and without fastenings of any known design.

What sort of locomotive may we expect to see, if it is to meet most future requirements? It should be built so as to:—

(1) Be able to run over the majority of the company's lines.

(2) Be capable of working all classes of trains up to speeds of 90 m.p.h.

(3) Have its whole weight available for braking and the highest possible percentage thereof for adhesion.

(4) Be equally suitable for running in both directions without turning, with unobstructed look-out.

(5) Be ready for service at short notice.

(6) Be almost continuously available.

(7) Be suitable for complete "common use."

(8) Run not less than 100,000 miles between general overhauls with little or no attention at the running sheds.

(9) Cause minimum wear and tear to the track.

(10) Use substantially less fuel and water per drawbar horse-power developed.

It should incorporate a boiler from which stay and tube trouble has been eliminated; high steam pressure to enable reduced cylinder dimensions to be used, and new design of cylinders with small clearance volume; feed-water treatment by equipment on the locomotive itself; feed-water heating by exhaust steam; all moving parts enclosed and continuously lubricated; all axleboxes with roller bearings; and remote control with driving cabs at both ends.

A new type of Southern engine has been designed, the construction of five of which has been authorised. It will incorporate the following features, and, it is hoped, will satisfy the desiderata given above. The locomotive is carried on two six-wheel bogies, the general design of which resembles those of the company's electric locomotives. These bogies have no centre pivot or bolster; the middle axle of each bogie is driven by a three-cylinder single-expansion engine. The engine develops a

(Continued on page 470)

\* Abstract of the Presidential Address delivered to the Institution of Mechanical Engineers by Mr. O. V. S. Bulleid, M.I.Mech.E., Chief Mechanical Engineer, Southern Railway, at a general meeting in London on October 18, 1946.



## Railway Applications of Welding in America

*Impetus to development during war and benefits obtained*

THE growth of railway applications of welding in America has been particularly rapid, and a brief survey of them is of especial interest, as the railways were the first industry to adopt welding in its present-day sense—apart from the Thermit process and the old-established forge welding.

Mr. Leland E. Grant, Engineer of Tests on the Chicago, Milwaukee, St. Paul & Pacific Railroad, in reviewing the subject in a recent issue of our American contemporary, *The Welding Journal*, the organ of the American Welding Society, reminds us that in its infancy, welding was considered so dangerous an occupation that it was necessary to pay the men a special rate to persuade them to undertake it. The oxy-acetylene process was then in use, and was chiefly used to repair leaks in locomotive fireboxes.

From this simple beginning, welding has grown to be an industrial necessity. Many processes other than oxy-acetylene are now used; the electric arc largely has replaced the gas torch; and the submerged arc, as well as methods of resistance welding, are now used daily.

Modern locomotives comprise several welded items; the successful fabrication of cylinders, wheels, crossheads, and other parts from steel plates (as substitutes for steel castings) received great impetus during the 1939-45 war; and further developments may be expected. Locomotive boilers are not yet regularly fabricated by welding, although one American welded boiler has been in service for seven years and requests to build several others have been granted by the Interstate Commerce Commission.

The attractions of the welded boiler are lighter weight and a reduced potentiality for embrittlement; probably, also, welded boilers will be cheaper when the necessary equipment and experience has been acquired.

Welded fireboxes are common in the U.S.A., but involve rather different con-

ditions, as the pressure is largely carried by the stays and not solely by the weld.

Tenders are now fabricated, except for the water bottom, which in present-day American practice is a steel casting. Internal baffle plates are welded to T-irons or angles and have to withstand heavy loads due to surging of the water in large-size tenders—a condition which will cause failure if precautions are not taken to obviate undercutting, unfilled craters, poor fusion, and undersized or lop-sided welds.

The water bottoms, though not fabricated, usually contain defects which can be repaired satisfactorily by welding. Such a large casting cannot be scrapped without heavy economic loss; and, anyhow, defects can be welded so as to make the casting just as serviceable as if they had never existed.

Diesel locomotive underframes may be still castings or they may be fabricated (frequently by the submerged melt welding process) from heavy plate. Such frames have proved entirely satisfactory in severe conditions of service. Manual welding is much used in fabricating diesel engine blocks, and spot welding is fairly common for fabricating cabs and other parts made of thin sheets.

Apart from safety appliances, passenger and freight rolling stock, not uncommonly, is made entirely of welded construction. Many special types of vehicles, as well as more conventional patterns, are made by this method. The subject needs the application of good welding engineering, because there is definite evidence that much more welding is being applied on new vehicles than is required. It will be appreciated that, once a repair depot has been equipped for effecting repairs by welding, it is to be expected that the method will be applied also to riveted vehicles wherever possible. This has been done extensively in the past.

In seeking satisfactory results, it should be realised that riveting allows some movement of the parts to be joined,

whereas welding does not; so the rigidity developed by welding causes unexpected subsequent failures. Attempts to make loose rivets tight by welding round the head are unsatisfactory because the amount of welding metal applied is too small to carry the load successfully, and the rivets soon work loose again. If the rivets are not replaced with new ones, properly driven, the parts themselves should be welded together; the rivets may then be "tacked" to keep them from rattling. During the war years, welding has been the means of saving large numbers of castings which otherwise would have had to be replaced.

### Welded Rail Ends

The application of welding to the maintenance of permanent way is comparatively recent in the U.S.A., but it is now common practice to weld chipped rail ends and to repair worn frogs. These are usually of high-carbon or manganese steel (in the case of frogs and crossings) and the welding conditions are not ideal; yet it has proved satisfactory and has greatly extended the useful life of rails and frogs. Improved alloy electrodes now permit the welding of frogs to give much longer life than was possible with either ordinary low-carbon or plain high-carbon electrodes, and the increased life more than offsets the extra cost of the alloy electrodes.

In addition to applications to the strengthening of bridges, welding is now used in the maintenance of many other items of railway equipment—cranes, tractors, excavators, etc. Here the application of electrodes giving good resistance to wear is important.

This brief survey shows that welding is now a vital process in railway work, not only in maintaining existing plant, but also in building new equipment, and its uses will undoubtedly increase. It must, however, be adequately safeguarded. Many lives and much valuable equipment are involved, and carelessness or poor workmanship should not be tolerated. The American Association of Railroads, however, has set up certain limitations on welding to prevent misapplication.

## The Responsibilities and Problems of the Chief Mechanical Engineer

*(Concluded from page 469)*

torque, the uniformity of which is comparable with that of a nose-supported electric traction motor, but has a higher speed range, and the unsprung weight is less. Capacity of the boiler has been made greater, relative to the cylinder horsepower, than in any previous Southern locomotive. The cabs at the ends will give an improved look-out. The engines are intended for working fast passenger trains of 480 tons weight over the difficult Southern Railway main line, and goods and mineral trains of up to 1,200 tons; they will carry fuel for 200 miles.

After this review of the locomotive problem as it presents itself to one locomotive engineer, it is appropriate to consider the last war and some of its effects on the Southern Railway.

Before the war a scheme was prepared and put into force to increase the repair facilities at the running sheds all over the system. When this was completed we were in a position to do light repairs at many outlying points. Before the war was over we had reason to be thankful for this foresight.

The traffic changed in character by alterations of route and increases in the distance hauled. At its peak the volume of passenger traffic increased 80 per cent. above the 1938 figure, and freight traffic increased by 70 per cent. In the works, the changes in the number of staff were as follows: in 1938 the number of employees in the locomotive shops was 2,844, and a further 3,543 worked in the carriage and wagon shops. The corresponding figures for the peak period of wartime employment were 4,564 and 3,391 respectively; and 1,628 women were included in the labour introduced into the works.

I have referred to the large number of trades unions whose members work in the railway shops, and this explains the ease with which any kind of war work could be undertaken and successfully completed in them. It supports the claim which is made that the best training ground of a mechanical engineer is a railway shop. Because of the vulnerable location of the company's main works, we suffered air attacks on more than one occasion which caused a grievous loss of life, and many other casualties.

In addition to special war contracts for the Navy, Army and Air Force, much work of a more normal railway character

was undertaken. We produced 130 2-8-0 tender locomotives of Sir William Stanier's design for the L.M.S.R. and L.N.E.R. and accomplished a spectacular feat in building 1,000 wagons at Ashford in nine weeks for the Persian route to Russia. We undertook the conversion of coaches for use in ambulance trains, the design and construction of tank ramp wagons, and the equipping of passenger luggage and covered goods vans to form mobile workshops.

Thanks to the ability and energy of the staff and the whole-hearted support of the General Manager of the Company, the Chief Mechanical Engineer's Department of the Southern Railway has come through its wartime ordeal better staffed and better equipped than ever. It has a proper feeling of pride in its steadfastness under trying conditions and in its wartime achievements.

G.W.R. ORDERS GAS TURBINE LOCOMOTIVE.—An order has just been placed by the Great Western Railway with British Brown-Boveri Limited for a gas turbine locomotive. The locomotive will develop an output of 2,500 h.p. and will be capable of a maximum speed of 90 m.p.h. It will be used on express passenger services.

## A Suggested Administrative System for Colonial Transport—1\*

*Increasing efficiency and reducing administrative irritation*

By G. V. O. Bulkeley, C.B.E., M.I.Mech.E., formerly General Manager, Nigerian Railway

THE language of imagery seldom has been more graphically used than when a famous Locomotive Superintendent likened a sluggish locomotive to "a laddie trying to run w' his breeks down." The picture is one of salutary import to such as essay the drafting of an organisation for colonial transport, lest it should fall into the same category.

It is important that any organisation shall fall readily within the framework of colonial administration. In the case of the British Colonial Service, this framework normally has a standard basis. Modifications in the case of individual Colonies do not affect underlying principles.

The following form the postulatory basis on which this article is prepared.

(i) That the administration of tropical Dependencies (known as Crown Colonies in the case of the British Empire) is vested in the Governor, who effects it through his principal personal assistants, the Chief Secretary, and the Financial Secretary (or Treasurer) in consultation with senior provincial officers and the chiefs of the technical departments.

(ii) That capital expenditure on colonial state transport services has been principally effected by loans raised in the home country on the credit of the colony as a whole, and on the understanding that provision is made for renewal of wasting assets.

(iii) That operative and financial principles are not affected by the administrative extent of any particular colonial transport service, and that the scope of each such service should be envisaged as growing.

(iv) That colonial transport services should assist in the economic development of the native peoples and satisfy the reasonable requirements of traders and shipowners.

(v) That colonial transport services, being links in the chain of world transport, (a) their daily operation should be effected by executive officers carrying full responsibility and having full power in that direction, and (b) administrative matters in respect of policy, finance, and purchasing, rates, development, legal matters, and labour affairs should be given decisive action with the minimum of delay and the avoidance of cross-correspondence.

### A Cumbersome Feature

In the author's view, the most unsatisfactory and cumbersome feature of the usual administration of transport in a dependency is the necessity for continual correspondence between the Secretariat and the heads of the transport departments. Misunderstanding and awkwardness can readily arise. The technicalities of the transport services may be improperly understood in the Secretariat, and the niceties of administration and colonial finance may merely irritate the head of the transport department concerned.

Where the men at the two ends of this correspondence are obstinate, the transport staff may quickly come to be regarded as awkward fellows by the Secretariat oligarchy, and, what is much worse, the

heads of the transport departments come to look on the Central Government as an enemy with whom contact is to be avoided as much as possible. This, where co-operation and mutual understanding are essential to success, leads to an administrative rift, to the assumption of wider powers by the transport heads, and the attempt to curtail these by the Secretariat; both these courses tend towards secrecy on the departmental side.

Under the original colonial conception, the chief executive of the railway claimed to be the sole authority on all matters concerning the railway, an absolutism not accorded on company-owned systems and one tending to establish a colonial railway as an *imperium in imperio*, its management frequently at loggerheads with the colony administration and its staff regarding their co-workers administering the provinces as aliens.

Any system which tends to prevent the state transport services from dovetailing into the general administrative pattern of a dependency is to be decried. In recent years it has come to be recognised that the technicalities of transport operation are a matter for authoritative decision by the head of the department concerned; finance, purchasing, rating policy, staff labour matters, and development are issues in the solution of which both the transport executive and the colony's administrative and financial executives are necessary in the general interests of the country and to enable the Governor to discharge his responsibility for the transport services.

There are two systems constituting a departure from the original arrangements under which colonial transport has been administered. That under which the Kenya & Uganda Railways & Harbours function obviates correspondence with the Secretariat, but an additional isolated Secretariat for transport matters is set up under the same Governor. The system has worked satisfactorily on the operative and commercial side under able General Managers, but on principle it divorces the two Central Governments' administrative organisations from any interest in, or contribution to, the transport affairs of the two dependencies, except partially as may accrue from the periodical meetings of the railway advisory body, of which one or other of the two Chief Secretaries is chairman and on which the Directors of Agriculture have a seat. The port advisory body has no connection with the Central Government, except that its Chairman is the Commissioner of Customs. The system appears to emphasise departmentalism by isolating transport as something apart from the general administrative life of the territories. Sir Donald Cameron expresses criticism of the organisation in his recent book on colonial administration.\*

In the case of the Nigerian experiment, which embodied a co-ordinating Director of Transport, although the system would obviate much ding-dong correspondence, stimulate inter-departmental discussion, and enable the transport issues of the territory as a whole to be analysed objectively and given balanced consideration,

the retention in their substantive posts of the heads of the transport departments—each with his separate accounting—would tend to produce an over-delicatise departmental balance difficult to control. In this respect the system organically is inferior to a fusion into one self-accounting department of the state transport services, which was the original recommendation for Nigeria.\*

Although the Kenya & Uganda system has not been duplicated in any other British dependency, a temporary co-ordinating post of Director of Transport was created in Ceylon just before the recent war. The outlook is clear for a full reconsideration of the problem.

It is clearly desirable that in widening colonial transport on to a national co-ordinated basis from the older and narrower conception of departmental exclusiveness, this should be done without detracting from the direct operative responsibility and authority of the heads of the transport departments. At the same time, a positive chain of administrative control should be forged. Where administrative function is loose, it becomes dependent on loyalty, an ingredient which, although it may be expected, cannot be legislated for, and the reverse of which under a goodwill organisation would impose an intolerable strain on the officer ultimately responsible to the Governor of the Colony.

At the risk of repetition, it should be made clear that this discussion does not envisage Secretariat control of transport operating; far from it. The conduct of transport in the State Transport Department necessarily must remain the function of each head of department. Sir Donald Cameron has emphasised that no department should be "Secretariat-ridden."†

The problem is threefold: (i) To enable the administrative and business experience of the Chief Secretary and the Financial Secretary, together with their knowledge of the colony's requirements as a whole, to be used in its transport administration; (ii) to give equal attention to the state transport services and to the other transport affairs of the colony outside their orbit and to co-relate all; (iii) to bring into closest contact with the Central Government and with each other the heads of the transport departments under some form of routine.

A point to be noted in respect of item (i) is that capital for the state transport services is raised on the credit of the colony as a whole and not on that of any particular department. This is important as postulating the participation of the Central Government in the affairs of the capitalised services. This has been effected in the past, but rather loosely. Correspondence between the head of the railway and the Secretariat, for instance, is most unsatisfactory, both sides being at a disadvantage.

### Powers of Decision

The head of a State Transport Department cannot claim logically to be given any wider powers of decision than are reposed in the manager of a transport company controlled by a board of directors. A directorate has been defined as "a body which is primarily concerned with the formation of policies which are brought about by the management." The Chief Executive of a company-owned railway does not conduct correspondence with his directorate. He meets it in conference, when decisions are taken.

(Continued on page 472)

\* An extract from a book, by Mr. G. V. O. Bulkeley, C.B.E., M.I.Mech.E., formerly General Manager, Nigerian Railway, entitled "Transport Administration in Tropical Dependencies," shortly to be published by *The Railway Gazette*

\* "My Tanganyika Service and Some Nigerian," pages 227 and 37

\* "An African Survey," by Lord Hailey, page 1,586  
† *Op. cit.*, pages 227 and 37





## Measurements for Industrial Production

*Optical and mechanical measuring equipment exhibited recently by Alfred Herbert Limited at Coventry*

**E**NGINEERING production today calls more than ever for accurate measurement and testing, and inspection procedure must be carried out rapidly, with the minimum chance of error, even by semi-skilled operators. The development of machines for this purpose is a specialised task in which the instrument maker and the engineer collaborate. The machine tool firm of Alfred Herbert Limited, Coventry, is agent for numerous manufacturers of measuring and inspection equip-

template, with the addition of micrometer measuring equipment reading to 0.0001 in.

Two types of Hilger Angle Dekkor were exhibited. These are optical instruments for comparing angles between adjacent or remote plane surfaces, and similar checks. In the projection type, the two scales by comparison of which discrepancies are measured, are shown on an illuminated screen instead of by direct inspection through an eyepiece, making the instrument convenient for continuous use. A demonstration was given of checking a machine tool bed with this apparatus.

### Hardness Testing

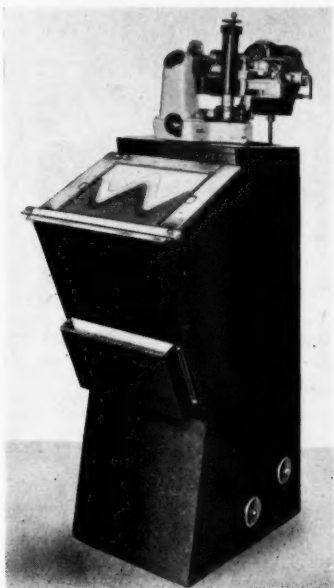
Among the hardness testing machines at the exhibition was an Edgwick visual instrument, which dispenses with the need for a separate micrometer, and enables measurements to be made without removing the work from the test equipment. The image of the indent made by the diamond is projected on a ground-glass screen calibrated in tenths and hundredths of a millimetre, and the hardness is found by reading the dimensions of the image, which can be measured to a thousandth of a millimetre by means of a micrometer incorporated in the measuring head. The resultant figure is converted into hardness numbers by reference to tables.

Rapid check of the balance of rotating parts is facilitated by two types of Avery dynamic balancing machines, one of which was shown testing the balance of an electrical armature. This instrument can be used by unskilled personnel after brief instruction, the procedure being simplified to the simultaneous adjustment of two controls and the taking of readings showing the magnitude of the out-of-balance force and its angular position. An alternative type of Avery machine was shown testing the balance of a crankshaft. Another procedure which has been simplified for unskilled labour is the grinding of form tools. The exhibition included a grinding machine by the Modern Tool Works, of Canada, in which the profile is shown magnified 50 times.

Development in electronics has permitted the design of a stroboscope offering many advantages in manipulation over mechanical types. In the Scophony electronic stroboscope, the inspection lamp,

which is provided with a convenient length of flex, is directed towards the object under examination, and the speed of flashing is adjusted until the object appears to be stationary. The adjusting knob is, in fact, the tuning control of an electronic oscillator, which causes the gas-discharge inspection lamp to flash at any frequency between 600 and 14,400 times a minute for reading corresponding speeds in r.p.m.

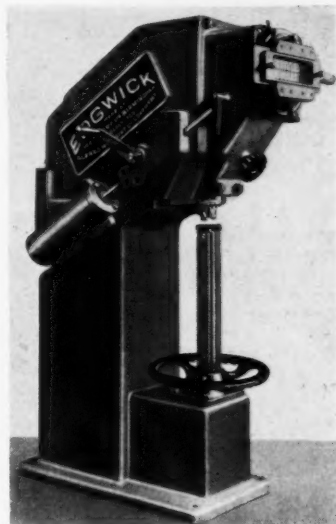
There are certain test processes which by reason of their simplicity and reliance upon "feel" tend still to be performed manually, although mechanisation offers advantages. The Edgwick mechanical handle permits the rapid gauging of threaded components, the gauge being rotated by an electric motor as soon as the component is applied to it. The spindle can move longitudinally, and this movement operates a micro-switch to start the



*Hilger universal projector*

ment, and recently held an exhibition at its Coventry works at which examples of such apparatus were demonstrated.

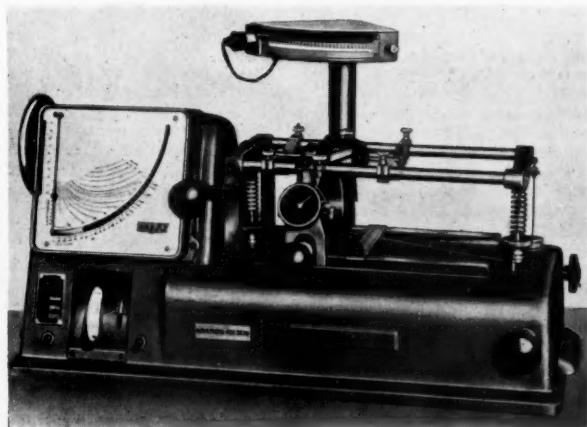
Optical enlargers and projectors are widely used for checking threaded and formed components against enlarged layouts. The Hilger universal projector combines the features of an ordinary projector for checking enlarged images against a



*Edgwick visual hardness tester*

motor when a component is applied. Pressure in the opposite direction reverses the motor through a second micro-switch, so that the gauge is unscrewed.

As announced in our October 11 issue, much of the same equipment will be on view in the Technical Exhibition to be held at the Kelvin Hall, Glasgow, from November 15 to 27.



*Avery dynamic balancing machine*



*Scophony electronic stroboscope*

## The Callender-Hamilton Bridge

*Some notes on this rapidly-erected form of equipment used so extensively during the war for both road and railway rehabilitation*

IN these columns during recent months there have been at least three references to the adoption of Callender-Hamilton type bridge equipment for the temporary rebuilding of Far-Eastern and Continental railway bridges. A few notes upon it may not, therefore, be out of place. The system consists of standard parts easily fabricated from ordinary rolled-steel sections, with bolted connections in all jointing, and is primarily in-

mentioned in a description of the rebuilding of main-line bridges on the Burma railways.

A high degree of accuracy in fabrication ensured by the use of jigs and gauges has established a justifiably good reputation for all Callender-Hamilton material, which is thus quickly and easily assembled and has proved reliable in service. Manufacture in England is entrusted mainly to Painter Brothers Limited, of Hereford,

and, to mention one instance only, in the Burma campaign the C.-H. type bridging equipment was used in large quantities, notably for rebuilding the heaviest types of long-span railway bridge.

For railway use, the system provides for all categories of line from main to light branch, and has been carried out in high-tensile steel in both England and India. All the usual methods of erection have been used with this equipment, including launching with a launching nose, as described in the articles on Standard Military Railway Bridges in these pages. It can also be adapted to form a steel arch span. A notable achievement was re-



*Callender-Hamilton type of bridge on a branch serving bauxite deposits on the Gold Coast*

tended for use in any variety of bridge from a light footbridge to a long-span highway bridge. There is, however, a second form of construction suitable for railway spans. During the war, the equipment was used by the Ministry of

and as that firm specialises in hot-dip galvanising of structural steelwork, this process has been adopted for the protection of C.-H. parts, with considerable subsequent economy, as painting is almost redundant and longevity is assured. In

corded in Assam, on the Burma lines of communication, when the Bulkadoba River bridge on the Bengal-Assam Railway was washed away, and within six weeks was replaced by a 248-ft. C.-H. through metre-gauge span. It is interest-



*Dismantling the temporary Callender-Hamilton bridge, erected in six weeks over the Bulkadoba River, Assam*

War Transport for emergency bridging in the United Kingdom and in Northern Ireland, and stocks were available for replacing bomb-damaged spans and for those too weak to carry heavy war-time traffic. It has also been used for considerable bridge renewal work in France and Holland, and in even greater quantity in the Eastern theatre of war, as already

fact, painting can be postponed for 10 or 15 years, the makers claim, according to local conditions, and when it is necessary a good surface is available with comparatively little cleaning; the paintwork, therefore, lasts much longer. Thanks to the interchangeability of the parts, manufacture has also been undertaken by leading steelwork firms in India and South Africa,

ing to note that this span was removed after the completion of the permanent bridge by withdrawing it across the channel with a launching tail, the reverse of the familiar launching-nose method of erection. The best-known example of a C.-H. span is probably in the temporary northern approach to Southwark Bridge, erected in 1941.

**THE BRISTOL "WAYFARER" IN SERVICE.**—In July this year Channel Islands Airways placed a Bristol "Wayfarer" aircraft in service on the route from London to Jersey and Guernsey. This is the first British post-war civil aircraft design to have completed regular air-line flying, and in that period has flown 36,023 miles, carrying a total of 6,711 passengers, 50,496 lb. of freight, and 4,198 lb. of mail on its journeys to and from the mainland. It was

announced recently by Sir Harold Hartley, Chairman of the British European Airways Corporation, that this type of aircraft will be used eventually on most of the internal routes in Great Britain. The "Wayfarer" is a twin-engined aircraft seating 32 passengers, and with a cruising speed of 140 to 180 m.p.h. Before the war the internal lines of Railway Air Services Limited were operated mainly by 8- and 16-seat aircraft cruising at 132 and 140 m.p.h.

**"CASTLE" CLASS OIL BURNER IN SERVICE.**—No. 5091, first of the Great Western Railway "Castle" class locomotives to be converted from coal to oil burning, went into service on October 18, when it hauled the 9.0 a.m. train from Swindon to Paddington and the 1.18 p.m. train from Paddington to Bristol. Twenty-five engines of this class are to be converted, and will be used on the Paddington to the West of England and South Wales main lines.

## RAILWAY NEWS SECTION

## PERSONAL

Mr. R. G. Davidson, who recently retired from the position of Chief Accountant, Southern Railway, has accepted a post on the board of Phillips Telescopic Taps Limited.

We regret to record the death on October 16, at the age of 67, of Sir Percy Elly Bates, Bt., G.B.E., Chairman of the Cunard Steam Ship Co. Ltd., and of Cunard White Star Limited, and a Director of the Great Western Railway Company, Midland Bank Limited and other companies.

He is succeeded as Chairman of Cunard Steam Ship Co. Ltd. and of Cunard White Star Limited by Mr. F. A. Bates.

Senhor Clovis Pestana has been appointed Minister of Transport & Public Works in Brazil.

The Swiss National Tourist Office, Zürich, has appointed Mr. H. O. Ernst as Manager of the joint London Office of the Swiss Federal Railways and Swiss State Travel Bureau, 118, Regent Street, S.W.1, in place of Mr. V. P. Ceresole, who has left the service of the Swiss National Tourist Office. Mr. Ernst has been a member of the London staff since 1919.

## FUNERAL OF MR. R. H. NICHOLLS

The funeral service for Mr. R. H. Nicholls, Superintendent of the Line, Great Western Railway, 1919-32, who died on October 13, was held at Christ Church, Cheltenham, on October 16. Among those present, in addition to family mourners, were:—

Mr. Cyril Lloyd, Director, G.W.R. (representing the directors); Mr. H. E. Hedges, General Assistant to General Manager, G.W.R. (representing the General Manager); and Mr. H. H. Phillips, Resident Assistant to Superintendent of the Line in South Wales (Cardiff), G.W.R. (representing the Superintendent of the Line).

We regret to record the death on October 19, aged 82, of Mr. Roderick Ninian Mackenzie, Traffic Manager, Central Argentine Railway, 1907-22.

We regret to record the death on October 9 of Mr. T. H. Harris, European Accountant, Canadian Pacific Railway. Mr. Harris joined the Canadian Pacific in 1903 in London, and in 1913 was transferred to the company's Vienna Office. He was there at the outbreak of war, and was interned for several months before being released in the summer of 1915. In 1922 he became Chief Accountant in the London Office, and in June, 1943, was promoted to be European Accountant. He also had been, since January 1, 1943, Secretary of the Mersey Towing Company. The funeral service was held on October 15 at St. Barnabas Church, Sutton, when, besides family mourners, a number of C.P.R. friends attended. The floral tributes included a wreath from Mr. E. A. Leslie, Vice-President & Comptroller, and the accounting officers at Montreal.

Mr. O. V. Bulleid, M.I.Mech.E., M.I.Loco.E., who is President of the Institution of Mechanical Engineers for 1946-47, is Chief Mechanical Engineer of the Southern Railway. Mr. Bulleid joined the former Great Northern Railway in 1901, as a premium apprentice at Doncaster. In 1906 he was made Assistant to the Locomotive Running Superintendent, and, in the next year, Assistant to the Works Manager. He left the G.N.R.

the Institution of Mechanical Engineers on the War Damage (Earth Movements) Committee of the Institution of Civil Engineers. He was President of the Institution of Locomotive Engineers, 1939-44.

We regret to record the death on October 16, at the age of 92, of Sir Henry Ledgard, who was a member, representing European commercial interests in India, of the Committee of Inquiry into Indian Railways of 1921.

Mr. W. J. Price, formerly attached to the Chief General Manager's Office, L.N.E.R., and recently released from H.M. Forces, has been appointed North Eastern Advertising Representative at York, L.N.E.R., in succession to Mr. Percy Carr, retired.

We regret to record the death at Schenectady, New York, on October 11, at the age of 77, of Mr. Henry Metcalf Hobart, M.Inst.C.E., M.I.Mech.E., M.I.E.E., at one time Chief Engineer to the British Thomson-Houston Co. Ltd. He was closely associated with the execution of that company's contract for the electrical equipment of the power station, sub-stations and locomotives for the Central London Railway at the end of last century; and was the author of several works on electric railway traction and engineering and other subjects. He was a Member of the American Society of Mechanical Engineers and a Fellow of the American Institute of Electrical Engineers.

Mr. W. H. Shortt, M.Inst.C.E., who, as recorded in our August 30 issue, has retired from the position of Divisional Engineer, Western Division, Southern Railway, has been in charge of the western engineering division of the L.S.W.R. and Southern Railway, at Exeter, for almost 25 years, having taken it over in January, 1922. Mr. Shortt commenced his railway service 44 years ago as an articulated pupil of the then Chief Engineer, Mr. J. W. Jacomb-Hood, who shortly afterwards called on him to establish what is now known as the Southern Railway Civil Engineering Laboratory. Mr. Shortt acted in 1908 as Secretary of a sub-committee of the Railway Engineers' Association formed to report on speeds of trains on curves, and devised a recorder for obtaining accurate records of the speeds of passing trains. About the same time he devised a new method for the improvement of the alignment of curves. All the speed measurements required by the Bridge Stress Committee in 1924-26 were made with a "Shortt" recorder; and Shortt's methods of curve alignment improvement are today in regular use throughout the Southern and many other railways. Mr. Shortt's work on his speed recorder caused him to turn to precision time keeping, and in 1923 he produced the prototype of the astronomical clocks which bear his name and are installed in observatories all over the world. In 1914 he was appointed Permanent Way Assistant to the Chief

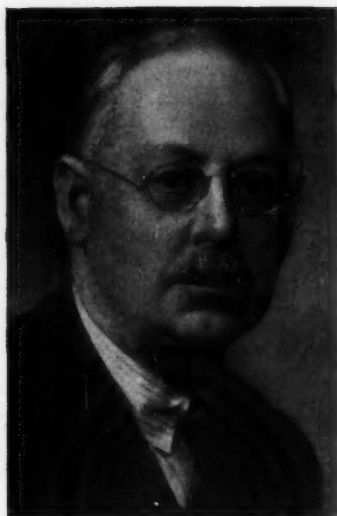


Mr. O. V. Bulleid

President, Institution of Mechanical Engineers, for 1946-47

in 1908, to become Assistant Works Manager at the Freinvile Works of the French Westinghouse Company. In 1910 he was appointed Mechanical Engineer to the Exhibitions Branch of the Board of Trade for the Brussels and Turin Exhibitions of 1910 and 1911. He returned to Doncaster in 1912, as Personal Assistant to Sir Nigel Gresley. In 1914 Mr. Bulleid was commissioned in the Army Service Corps; he served at G.H.Q. and Army Headquarters in France, and was promoted Major in 1917. He was transferred to Richborough as Works Manager in August, 1918, and was demobilised in February, 1919, after which he returned to Doncaster. In 1920 he was appointed Assistant Carriage & Wagon Superintendent, and in April, 1923, he became Assistant to Chief Mechanical Engineer, L.N.E.R., which position he held until he joined the Southern Railway as Chief Mechanical Engineer in 1937. In 1939 Mr. Bulleid was elected a member of the Permanent Commission of the International Railway Congress Association, and in 1943 he was appointed to represent



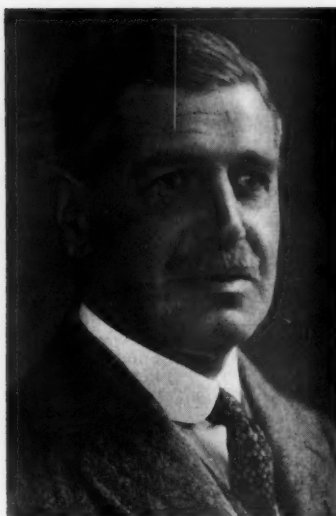


**Mr. W. H. Shortt**

Divisional Engineer, Western Division,  
Southern Railway, 1923-46

Engineer, which post he held until his transfer to Exeter, except for the years 1916-18, when he served in France and Belgium as an R.E. field company officer. In the immediate post-war period he was instrumental in introducing on the L.S.W.R. through-bolt chairs, a number of which is still in use. During his term at Exeter he has been responsible for the relaying of the whole track of the division, and the re-alignment of principal curves. The company's stone quarry at Meldon and concrete depot at Exeter also were a divisional responsibility. The most notable products of the concrete depot are probably the precast footbridges, examples of which are to be seen all over the Southern Railway, and the recently-standardised platelayers' huts, supplied as single units, with all internal fittings, and deposited in position by a mobile crane. Mr. Shortt also was responsible for the design and construction on the first precast concrete under-bridge to be built on the Southern Railway; and for adapting the Great Western method of depositing rails in a continuous line along the centre of the track, by withdrawing the train of wagons, to the off-loading of a continuous line of concrete sleepers in a similar way.

We regret to record the death on October 13 at the age of 72, of Major Angus Matheson Stewart, M.B.E., M.Inst.C.E., formerly Engineer-in-Chief, Buenos Ayres Western Railway, who retired in 1930. He received his engineering training in Glasgow with the firm of Simpson & Wilson, which then was engaged on several large works, including the Glasgow District Subway, for a paper on which, published in the *Proceedings of the Institution of Civil Engineers* in 1895, he was awarded a Miller Prize. In 1896 he joined Thos. Meik & Sons, Edinburgh, as Assistant to the Resident Engineer on the construction of the East Fife Central Railway, and afterwards was engaged by the same firm on various surveys and designs. In the next year he was appointed Assistant Engineer, Dominion Atlantic Railway, and in 1899 he went to Santo Domingo as Engineer, Samana & Santiago Railway. Major Stewart joined the Buenos Ayres Western Railway in 1905, and served as Assistant Engineer on, and Engineer-in-Charge of, extension work, and as District Engineer,



**The late Major A. M. Stewart**

Engineer-in-Chief, Buenos Ayres Western  
Railway, 1919-30

until 1912. He then was appointed Assistant Engineer-in-Chief of the B.A.W.R., and in 1919 became Engineer-in-Chief. For a short period during the year in which he retired he was Acting General Manager. From 1916-18 he served in the R.E., and was made an M.B.E. (Military Division).

We are informed that the age of Mr. James Clayton, Personal Assistant to the Chief Mechanical Engineer, Southern Railway, 1923-38, whose death we recorded, and of whom a portrait and biography appeared, last week, was 73 (and not, as then stated, 67).

Mr. Gilbert Szlumper, formerly general manager, Southern Railway, has joined the North British Locomotive Co. Ltd., as London Representative with offices at 82, Victoria Street, London, S.W.1.

We regret to record the death on October 18 of Mr. Leonard William Judd, M.B.E., formerly Indoor Assistant to the Traffic Manager, Southern Railway.

Mr. James B. Thom, whose appointment as European Traffic Manager, Canadian National Railways, was recorded in our August 9 issue, and of whom a portrait and biography appeared in our August 16 issue, has arrived in London from Montreal to take up his duties.

We regret to record the death on October 21, aged 67, of the Hon. P. J. A. Cardin, K.C., from 1935 Minister of Public Works, and from 1940 also Minister of Transport, Dominion of Canada, until he resigned from both posts in 1942.

Mr. R. N. Eden, Chief Clerk, District Goods Manager's Office, Newport, Great Western Railway, who, as recorded in our October 4 issue, has been appointed Assistant District Goods Manager, Cardiff, joined the company in 1911. After serving in the 1914-18 war, and after holding a number of positions, he went to the Chief Goods Manager's Office in 1937, where he was for a time in charge of the Staff Investigation Committee. He acted as Shed Superintendent at Cardiff from the outbreak of war until his return in



**Lt.-Colonel W. F. Spree**

Appointed Assistant General Traffic Manager,  
Associated British & Irish Railways, New York

1940 to the Chief Goods Manager's Office for special duties. He became Chief Clerk to the District Goods Manager, Newport, in 1943. Mr. Eden initiated the single-check system in G.W.R. goods sheds.

Lt.-Colonel W. F. Spree, late R.E., who, as recorded in our October 11 issue, has been appointed Assistant General Traffic Manager, Associated British & Irish Railways Incorporated, New York, joined the South Eastern & Chatham Railway in 1911. He was released for military service in 1916, and subsequently was commissioned to the Machine Gun Corps, serving in France, Belgium and Germany. On demobilisation in 1919 he returned to the railway service in the Office of the Superintendent of the Line, London Bridge. On the re-opening of the Cologne agency in 1921 he was attached to the Cologne staff; he was appointed Assistant Agent in 1935, and General Agent for Germany and other countries east of the Rhine from January 1, 1939. At the outbreak of the recent war Colonel Spree was seconded to the War Office for special duties. In 1943 he was appointed Assistant Director of Transportation, War Office, and served on the Joint British-U.S. Planning Committee for the provision of transportation and engineering equipment for the invasion of North-West Europe. In 1944 he was transferred to Supreme Headquarters and served in France and Germany until he returned to his former appointment at the War Office. On release from active military duties he has been granted the permanent honorary rank of Lt.-Colonel. Colonel Spree comes from an old railway family which, in the direct line of descent from his great-grandfather, has many years service with the Southern Railway and its predecessors.

The Southern Railway has appointed Mr. A. H. Peet as Racecourse Liaison Officer.

#### COLONIAL RAILWAY APPOINTMENT

The Secretary of State for the Colonies has approved the following appointment: Mr. C. W. Leverett, Assistant Traffic Superintendent, Tanganyika Government Railways, to be District Traffic Superintendent, Palestine Railways.

## Railway Charges Consultative Committee

*Addresses on behalf of organisations of traders*

The Railway Charges Consultative Committee continued its inquiry in London on Monday, October 14, into the adjustment of the rates, fares, and charges of the controlled railway companies and joint lines. Sir Bruce Thomas, K.C., is Chairman of the Committee, the other members of which are Mr. H. E. Parkes and Mr. T. E. Argile.

Mr. H. V. Rabagliati, K.C., appearing for the National Coal Board, the Mining Association of Great Britain, and the Monmouthshire & South Wales Coal Owners' Association, said: "The reason why my client, the National Coal Board, is here is because it feels that coal, being a basic product which enters into almost everything in this country, industry in all its ramifications, including the railways, and domestic life in all its forms, is a product which ought to be sold to the public as cheaply as possible.

Referring to the period of control, he said: "You will remember that a question somewhat similar to this present one was before you in 1940, and it was again a look into a future which could not accurately be foretold. The railway companies at that time must have been putting forward estimates which were pessimistic, because, notwithstanding large increases in expenditure, even in the first year, the net revenue exceeded requirements, and in the period of five years there was a balance of £195 millions. If there had been additional charges put on in 1940, there would have been a railway deficit only of £24 millions in the five years.

"How much more sympathy would the railway companies and the Government have had, if they had come before you now, saying: 'We have run all through the war with a rise of only 10 per cent. on standard charges, and notwithstanding that, we have made a deficit of only £24 millions. We come here now in view of increased expenditure to ask for further additions.'

"There was an estimate in February and March by the railway companies of a revenue of £278 millions for 1946, and the Minister of Transport made his statement in Parliament accordingly. He said that there would be a deficit of £40 millions on a full year, and that he was going to put on charges which would raise £15 millions in a half-year. That would leave a deficit of £25 millions. When these proceedings were commenced, and the results of the first 24 weeks' traffic of the year became known, the railways discovered that their original estimate was £13 million too low.

"They then made a revised estimate, raising it by £13 millions. I think I shall be able to show that the second estimate made by the railways, allowing for charges which the Minister had put on during the second part of the year, would still leave a deficit of £10 millions.

"On the evidence and the facts which have been put before the Committee, it is possible to show, in all reasonable possibility, that that £10 millions deficit will be wiped out. One is entitled to say that, with regard to 1946, the original estimate of the railway companies was not £13 millions wrong, but something like £23 or £25 millions. If that is so, then for 1946 there will be no deficit at all to be fixed by the Treasury."

The future of the railways was uncertain, Mr. Rabagliati continued. They might be nationalised, but so long as the

Railway Control Agreement lasted it could be assumed, from what had happened from 1940-45, that if any additional increases were put on, any surplus revenue would be gladly received by the State and there would be no further requests to the Committee to adjust charges.

"Charges which are put on are likely to remain, particularly if they result in a large surplus," Mr. Rabagliati said. "If they result in a deficit, then, indeed, there would either be a new increase made by the Minister or another reference to this Committee. It is extremely unlikely that there would be any further reference made to the Committee or any reduction made in the event of a surplus."

### EFFECT OF CONTROLS

Mr. James J. Hughes, for the Traders' Co-ordinating Committee on Transport, representing 66 national associations, urged that fares and rates should be kept as low as possible.

"Traders generally are dependent on the controls today. We are hoping that they will be much less arduous in 1947. The whole of industry is looking forward to a lessening of the controls, and I hope that in 1947 the traffic carried by the railways will increase greatly. Industry is striving hard at the present time to improve export trade, and with that improvement and lessening of controls there is a prospect of increased rail traffic."

Mr. Lionel Heald, K.C., replying for the railway companies, said:

"I believe I can fairly say that the railway companies have been consistent in their conduct of these proceedings. Having formed a definite view that the present level of charges should be raised, we decided to submit before the Committee without fear or favour the estimates which had led us to that conclusion.

"We have not made any pretence to infallibility. What have the various parties to this inquiry contributed that is of real value to the Committee? We claim no more for our estimate of expenditure than this—it is neither over-optimistic nor pessimistic, but realistic."

When dealing with the railways' estimates of receipts, Mr. Heald announced the traffic receipts for the first forty weeks of the year, and said that the figures were almost similar to the estimates of the railway companies. "They are entirely consistent with the views we have taken and justify our estimates of receipts," he said.

On Tuesday, Mr. Geoffrey Hutchinson, K.C., opened the case for the Chamber of Shipping. He reminded the Committee of the Minister's direction to it in its terms of reference to have regard to the importance of maintaining adequate coastwise shipping services.

"In considering what weight you are to give to the question of full employment, I submit that full employment in the shipping industry is no less important than it is in the coal or steel industries or any form of manufacturing industry," he said.

Mr. Hutchinson continued by referring to the question of relationship between freights and operating costs on the railways as compared with coastwise shipping services. Witnesses for the railway companies had estimated that the increases in operating costs were 75 per cent., but as against that, they were only recommending that the rates should be raised by 37 per cent., which meant that their increased working costs were not fully re-

flected in their proposed increased charges. But in the case of the coastwise shipping services, their operating costs must necessarily bear a much closer relationship to the charges.

If coastwise shipping freights had increased throughout the war in relation to increases of the operating costs, whilst railway freights were raised to only 16½ per cent. above pre-war level, shipping freights would have reached a level totally uncompetitive with the railway rates, and traffic would have left coastwise shipping and gone to the railways, but during the war certain factors operated which prevented that from happening. First, coastwise shipping was carrying a large volume of Government traffic and Government sponsored traffic, which was now falling off steadily. For the coastal liners, the freight equalisation scheme was introduced, and the coal freight refund scheme was started for coastal tramps where basic rates were fixed and refunds were paid where the actual freight exceeded the basic rate.

"Notwithstanding the increases in operating costs which the tramp owners had experienced, the rates of large tramp steamers which carry coal are fully competitive with the railway rates. It is certainly not the wish of shipowners that their industry should become a permanently subsidised industry, and I think it is the intention of the Minister that that should not be so. This Committee must assume that the support which the coastwise shipping owners receive at present is temporary."

### CHARGES ON SHIPPING

Mr. Hutchinson pointed out that, where a railway rate was higher than coastwise shipping, it was not necessarily uncompetitive, because coastwise shipping services were slower than the railways and had to face additional charges such as marine insurance. "My witnesses will say that to be fully competitive there must be a differential in the rates in favour of coastwise shipping of about 15 per cent.

The position of the railways is that the bulk of their traffics are carried at exceptional rates. If they were carried at standard charges, the difficulty with which I am concerned would not exist at all. We would then have a competitive basis. In March, 1928, 50.29 per cent. of the railway companies' receipts were derived from traffic carried at exceptional rates. In March, 1939, it was 73.51 per cent., so that in eleven months between the date when the new schedule of charges came into operation and the beginning of the war, there had been an increase of 23 per cent. in the proportion of receipts derived from traffic carried at exceptional rates. But that was not the end, because in 1939 the railway companies obtained the rates for traffic at agreed charges."

### REALISTIC—NOT OPTIMISTIC

Earlier in the proceedings, Mr. Lionel Heald, K.C., defending the railway companies estimates, told the Committee: "You have been told that the railway companies are not sufficiently optimistic about 1947. My first answer is that it is not the business of the railway companies to be optimistic. Their business is to run the railways, and they have been realistic. Nor is it the function of the Committee to be optimistic. You have to come to a conclusion on a very difficult matter and arrive at some figure of the estimated amount which is required to be raised by additional charges: or, if you are prepared to do so, to say that a certain amount will be raised by the present level of charges and that that will be sufficient to meet the

£38,000,000 required. The function of the railway companies is to tell you what figure they can safely recommend you to put in your report. It is a very difficult task, we know, but I don't think you are being very much helped by being told by others that it is somewhere between £317 and £347 millions.

Mr. T. E. Argile, Member of the Committee, drew Mr. Heald's attention to a statement of his which indicated that one of the limiting factors to any increases in traffic was the allocation of coal supplies to the railways, and asked Mr. Heald to elaborate the point.

#### COAL STOCKS

Mr. Heald: "When one knows what the present coal stocks of the railway companies are in weeks' supplies, as compared with what they normally are, we really do feel very great hesitation in saying how much more traffic we shall be able to run than we are now planning to do."

Mr. Argile: "Weren't these figures published a few days ago in the press?"

Mr. Heald: "I don't think so. It is not a figure which we should like to shout from the housetops. It is a figure of something just over a week."

The week before last, Mr. Heald added, their receipts of coal were 50,000 tons below the allocation. Of the Minister's recent appeal for a 10 per cent. reduction in fuel, he said: "I don't see how we can be excluded from it."

Mr. Granville Slack, representing the National Coal Board, pointed out that they had not had time to check on Mr. Heald's statement that the week before last coal allocation to the railways was 50,000 tons low, but they had made inquiries with regard to the Southern Railway, and the fact of the matter was that the shortage in this case was due to a shortage of wagons and not to a shortage of coal.

On Wednesday, Mr. Geoffrey Hutchinson, K.C., representing the Chamber of Shipping, continuing his case, told the Committee of the increase in coastwise shipping rates that would have to come into operation when the present assistance which is given by the Minister of Transport is withdrawn, and submitted proposals for increasing exceptional rates.

"Statistical tables on which one of my witnesses will speak," Mr. Hutchinson said, "will show that, when the coastwise shipping services are placed upon an economic basis, and the assistance which they have been receiving from the Minister of Transport is withdrawn, the position will be that coastal liners' rates will have to be surcharged by at least 75 per cent. over pre-war as against a proposed surcharge of 37 per cent. on the railway exceptional rates. The result of that will be that coastal liners will be placed in a position which, frankly, would be uncompetitive with traffic carried at exceptional rates."

"The position of the coastwise tramps is very similar, although it isn't quite so easy to demonstrate it in the case of the tramps, because there are new schedules of freights," Mr. Hutchinson added.

Mr. Hutchinson summarised the position: "It seems to be almost inevitable when the present conditions change, that a very large volume of traffic which has been accustomed to go by coastwise shipping will be diverted to the railways, which will be very unfortunate for the coastwise shipping."

The railway companies had paid very little attention to this part of the terms of reference of the Committee, Mr. Hutchinson claimed. One of their witnesses, Mr. F. A. Pope, had said that there were already

adequate coastwise shipping services and that nothing the companies were recommending was prejudicial to coastwise shipping.

Mr. Hutchinson then referred the Committee in detail to the coastwise shipping situation after the first world war and to the Railway Rates Advisory Committee report of 1921.

"The situation then was not very dissimilar to what it is today," he said. "Coastwise services were considerably depleted as a result of the war, and found themselves confronted with an increase in operating costs and with the competition which they were bound to anticipate from traffic carried by the railway companies at exceptional rates. The position was, perhaps, more favourable to them then in the sense that there was an overall advance of 50 per cent. in the railway rates."

Mr. Hutchinson: "The Railway Rates Advisory Committee was presented with very much the same problems as you are today, and it came to the conclusion that it was not practicable to find any solution. The point I am making is that, as a result of that conclusion, for six years coastwise shipping services were unduly depressed, and it was not until there was a great change of the whole structure of the national economy and the price level was adjusted, that the restoration of the reductions in coastwise shipping services to the pre-1914 level became effective."

Sir Bruce Thomas: "The situation today appears to be brought about solely by the fact that there is a greater increase in your working costs than the railway companies."

Mr. Hutchinson: "I would not put it like that. In the case of the coastwise shipping, the rates necessarily bear a much closer relationship to the increases in working costs than they do in the case of the railway companies." He reminded the committee that Mr. Pope had said in his evidence that, because they were a large transport undertaking, the railway companies were "able to make up on the roundabouts what they lost on the swings." The coastwise shipping industry could not do that.

Mr. Hutchinson said that he had certain submissions for "this troublesome problem that has existed for so many years." But he was first in a position to show the financial effect of his submissions.

The first submission related to the exceptional railway rates which were more than 40 per cent. below the standard charge, and which had been established between ports.

"They are almost certainly rates which were established in competition with coastwise shipping, and I invite you to advise the Minister that they should be stepped up to 40 per cent. below the standard charge," Mr. Hutchinson said. "Is it asking the traders to bear a very unfavourable burden to recommend that to the Minister? I submit that this request would not jeopardise in any sense the financial recommendations the Committee has to make. I am in rather a peculiar position. I am the only counsel here who asks for railway rates to be put up, and I am met with the answer from the railway companies that that would cause a loss in revenue. But I would submit that to put up this comparative small class of rates by a comparatively small sum is not going to affect the financial estimates much."

"My second submission is that exceptional rates between 20 and 40 per cent. below the standard charges should be dealt with by the existing conference machinery between the railways and the

coasting companies. But the difficulty with the conference machinery is that, if there is a disagreement, it produces a deadlock, so I would further submit that this Committee should recommend to the Minister that he should give a direction that, in the event of disagreement between the parties in the conference, the parties should come to the Committee, and after hearing them, the Committee should advise the Minister whether the rates should be adjusted or not."

Mr. Hutchinson referred the Committee to recommendations made by the Transport Advisory Council in its report in 1939, that the conference machinery existing between the railway companies and the coasting liner companies should provide for arbitration.

"The position today is different in a material way from 1939, because the Minister of Transport now has power, under the Defence Regulations which presumably can last for another four or five years, to alter charges. Therefore, it seems to us that the most expeditious and effective way of bringing matters which are in dispute in the conference to a final conclusion, is that we should be able to come to this tribunal, sitting in a consultative capacity, and that you should tender to the Minister advice as to whether he should adjust rates in dispute under his emergency powers."

#### RAILWAY AGREED CHARGES

Mr. Hutchinson's next proposal concerned railway agreed charges, which, he said, the Chairman had pointed out were established, not in competition with the coastwise shipping services, but road services. But it was quite clear, Mr. Hutchinson thought, that at the present time, long-distance hauls were included in the basis of agreed charges. He, therefore, submitted that in the case of new agreed charges or in the renewal of existing agreed charges, they should be zoned over a certain prescribed territory which he suggested should be 50 miles.

Chairman: "Do you mean that no agreed charges should be made for any traffic that is going to travel more than 50 miles?"

Mr. Hutchinson: "Yes."

Mr. Hutchinson's last submission related to dock charges.

"There is an existing differential charge as between coastal liners and their cargoes and other rates, dues, and charges which, of course, include tramp steamers and their cargoes," he said. "The existing differential fixed by the Minister of Transport on July 1 was 15 per cent. in respect of coastal liners and their cargoes, and 40 per cent. in respect of other rates. The railway companies are recommending that in each case the surcharge should be raised to 60 per cent. In respect of these dock charges, the railway companies are departing from their plan of a uniform surcharge and recommending a surcharge which is much higher than the surcharges they recommend on other traffic."

"What we submit to you is that the surcharge on all coastwise vessels and cargoes should be fixed at 15 per cent. That is to say, we submit there should be no increases in the existing rates on coastal liners and cargoes, and a reduction on the rates for tramp steamers and cargoes from the 40 per cent. that was fixed by the Minister in July to 15 per cent. This adjustment could be done within the limits of the railway companies' budget. The balance which their estimates show would be only slightly reduced."

Mr. Edward Walker Burness, director



of the London-Edinburgh Shipping Company, director of A. F. Henry & McGregor, coasting shipowners, of Leith, and Chairman of the Coasting Liner Section of the Chamber of Shipping, told the Committee: "Before the war, the coastal shipowners were viewing their position with real concern. We were finding increased difficulty in maintaining our proper share of traffic. We were in opposition with the long-standing policy of the railway companies of low and exceptional rates. The situation today is much more precarious. If conditions throughout the industry remain as they are, the chance of survival of the industry would be very thin indeed."

The inquiry adjourned until Thursday, when Mr. Burness said that, out of his table of 216 examples of exceptional railway rates more than 40 per cent. below standard, 190 coasting rates in 1939 were lower than the railway rates, but for 1947 only 36 coasting rates would be lower. Out of his table of 127 examples of exceptional railway rates less than 40 per cent. below standard, 93 coasting rates in 1939 were lower than the railway rates, but in 1947 only 17 would be lower.

Later, Mr. Burness spoke of the damaging competition to coastwise shipping of railway agreed charges. They were the arithmetical average of the trader's costs for long and short-haul journeys, but although they had been introduced by the railways to meet road competition, they had caused damage to an innocent third party. If agreed charges could be zoned from the point of origin of the traffic—agreed charges for different lengths of journeys—much of the damage caused to coastwise liners would be removed.

#### DOCK CHARGES

Dealing with dock charges, Mr. Burness pointed out that at non-railway ports it was customary to charge a lower rate of dues, not only on coastwise vessels, but the cargoes as well, whereas at railway ports the preferential base rate was limited to coastwise vessels only. Cargoes bore a uniform rate of dues whether moving coastwise or foreign.

The railway companies had admitted that at such ports at Bristol, Leith, and Dundee the percentage increases put into operation since 1939 were lower for the coasting trade compared with those for the deep-sea trade, but the lower surcharge at the railway ports applied to the coasting liner trade only, and did not include the coasting tramp trade. He saw no justification for restricting the preferential to coastwise liners and for not extending it to coastwise tramps.

"The amount of money involved is relatively small compared with the total railway clock figures," he said. "The proposed substantial rise in the percentage increase for the coasting liner vessels will tend to drive traffic away from the ports rather than to increase revenue. The wiser course would be to extend the lower differential to all coastwise traffic."

Asked to express the outlook to the future of all coastal liner companies, Mr. Burness said he could best illustrate their approach to the future by the experience of his own company, which in its Leith to London regular liner service before the war operated three fast, highly-specialised passenger cargo liners. All three vessels were lost by enemy action, and had been temporarily replaced with coasting tonnage of a simpler type, cargo only, which was good enough to maintain their connections during the present transitional period.

The pre-war vessels had been built at a cost of £100,000 each. They could not have been replaced by new ships built during the war, because new tonnage of that type was not permitted, but if they were replaced to-day by new tonnage of the same type, they would cost at least £250,000 each.

"But the present precarious outlook for the coastal liner trade must prevent the company from seriously considering such a capital expenditure," he said. The programme has accordingly been planned to bring into operation a new joint company which will combine, under single control, the London liner services which have been conducted by four separate companies.

The vessels which the new joint company would acquire would in all probability have to be of the simpler cargo type, probably cargo liners only. The cost of passenger liners today would prevent them from such an outlay.

On the coastal liner trade's view of the railway exceptional rate, Mr. Burness said: "We had already taken the view long before the war that low exceptional railway rates must depress coasting rates."

#### FREIGHT EQUALISATION SCHEME

When the inquiry was continued on Friday, Mr. E. W. Burness was asked by Sir Valentine Holmes, K.C.: "Assuming that the Freight Equalisation Scheme is concluded before the end of this year, and that the Scotch seed potato scheme is not brought into operation in 1947, can you form any rough idea as to what the effect of that would be in loss of gross receipts on traffic to the coastwise shipping companies, if freight rates on the railways in 1947 remain as today?"

Mr. Burness: "I have made no attempt to estimate it, but from the experience of my own company, I should say that the loss would be at least in terms of tens of thousands of pounds for each coasting liner company."

Sir Valentine: "If the Freight Equalisation Scheme continued in 1947, and the Scotch seed potato scheme was brought into operation again, you would hope that the coastwise shipping companies would not lose traffic to the railways in any serious way, even with the rates as they are today?"—"Yes."

If both the schemes are terminated in 1947, and if you get the full proposals you are asking for here, you don't anticipate that that will enable you to retain your present traffic?"—"We shall lose a very large proportion of it."

"So that if you get your recommendations to the full, you will, in 1947, lose a large portion of your traffic?"—"Assuming the termination of the Freight Equalisation Scheme."

The Chairman asked Mr. Burness for his comments on "the very formidable difficulty presented in connection with the alteration of exceptional railway rates more than 40 per cent. below standard which had been established between ports, because 'the effect of them was not confined to the ports, but spread around them.'"

Mr. Burness: "I think it would be fair to say that between ports there is a larger body of low exceptional rates than normally exists between any two interior areas."

Sir John Fisher, Governing Director of James Fisher & Sons Ltd., Barrow-in-Furness, who was director of the Coasting & Short Sea Division of the Ministry of War Transport throughout the war, gave evidence of the great part played by the coasting fleet during the war after outlining the Governmental control exercised

during the war, and still exercised at present over the coasting tramp trade. Sir John said that, like the coastal liner owners, the coastal tramp owners had experienced considerable increases in their operating costs during the war. Wages were the first of the main items.

Mr. H. E. Parkes: "Have you formed any idea of the total of the increased costs of operating?"

Sir John: "I have a rough idea. I don't think 200 per cent. is too high."

The second item of increased operating costs, Sir John continued, was the cost of bunker coal today, which had very substantially increased, and he quoted the Committee a comparison of 157 per cent.

Marine insurance was another factor, Sir John added, why their operating costs were so much more than those of rail and road, and an increase of 100 per cent. was about the right figure. The fourth item related to the price of shipbuilding and repair costs, which had risen about 100 per cent.

The effect of all the increases was reflected in the rates of freight approved by the Minister of Transport, which showed an increase today in the freight rates over pre-war of 200 per cent.

The Coal Freight Refund Scheme and Governmental direction of traffic were two measures of assistance which the coastwise tramps received. But, said Sir John, "when this assistance ends, the smaller ships will be unable to compete with rail transport."

Mr. Hutchison: If the railway exceptional rates more than 20 per cent. below the standard were adjusted upwards, would that assist the competitive capacity of the tramp owners?"—"Yes, it would."

"Tramp owners are also affected by some of the exceptional railway rates more than 40 per cent. below the standard?"—"Yes, but it is in the main the exceptional rates between 20 and 40 per cent. below standard that affect them."

Sir John said that coastwise tramp trade greatly welcomed the Chamber of Shipping proposal to adjust railway rates more than 20 to 40 per cent. below standard by conference machinery. Supporting strongly the proposal that the railway companies recommendations should be adjusted so that the surcharge upon all dock dues and charges in respect of coastwise vessels and cargoes should be only 15 per cent. over pre-war, he said:

"That would not help us to regain our competitive position with the railways; it would be 'something in the bag,' but it would not put us on our feet again."

"The losses suffered by our coasting and short sea fleet during the war were about 600,000 gross tons, and the pre-war tonnage of coastwise shipping was 1,350,000 tons, so we lost nearly half of our coasters. The replacements during and since the war amount, according to my estimate, to about 300,000 tons."

The next document Sir John handed in to the Committee contained extracts from the Board of Trade "Trade and Navigation Returns," and the figures showed a substantial drop in the arrivals and departures of vessels in the coasting trade for the first six months of 1945 and 1946 compared with one half of 1938.

Cross-examined by Mr. Alfred Tylor, K.C., representing the railways, Sir John said he did not think that if exceptional rates more than 40 per cent. below the standard which existed between ports were raised to 40 per cent. below the standard, the railways would lose traffic to road transport.

The inquiry adjourned until Monday.

## Institution of Mechanical Engineers' Annual Dinner

The annual dinner of the Institution of Mechanical Engineers was held at the Dorchester Hotel, Park Lane, W.1, on October 17. Mr. O. V. S. Bulleid, M.I.Mech.E., President, was in the chair.

After the loyal toasts had been honoured, the Rt. Hon. John Wilmot, M.P., Minister of Supply, proposed the toast: "The Institution of Mechanical Engineers." He paid tribute to the 4,000 members who served in the engineering sections of the Armed Forces, and to the 140 who gave their lives for their country. The recent war, he said, was highly mechanised. Among the factors which brought victory was the efficient deployment of our scientific and engineering skill; in the proper use of those unmatched resources the Institution played a great part. The mechanisation of industry was one of the foundations on which British industrial and commercial prowess were based. From our engineers we had had quality always; today we must add to improved quality, much greater quantity. The future would depend on keeping up standards, by attention to the education and training of engineers, and in the extension of applied research.

The President said that in eight years since the last annual dinner, the membership of the Institution had increased by over 10,000; its present figure was 23,483. The increase was particularly great among graduates and students, which ensured an adequate number of properly trained men for the future. In the last resort, however, the engineer depended on the skilled craftsman as in the past. Robert Stephenson in 1858 had observed that skilled labour was the fulcrum on which all our social progress depended.

A closer understanding had grown up in recent years between the three major Institutions (the Institutions of Civil, Mechanical, and Electrical Engineers); they already had a working party known as the "Three Presidents' Committee," and had launched the Professional Engineers' Appointments Bureau. Recently, too, a conference had been held with representatives of the senior engineering institutions overseas. The approaching centenary of the Institution (1947) was an important landmark in its life, and the Institution now could be regarded with the respect due to its venerable, but far from decrepit old age.

Lord Dudley Gordon, D.S.O., M.I. Mech.E. (Vice-President) then proposed the toast of "Our Guests." It was appropriate, he said, that at the first post-war dinner, the Minister (Mr. Wilmot), particularly charged with the care of the engineering industry, should be present.

Mr. G. R. Strauss, M.P., Parliamentary Secretary to the Ministry of Transport, who responded, said that during the activity of mechanical engineers in the past hundred years, transport had been brought within the means of everyone, for business or recreation. It was also one of the chief factors in the development of industry.

His Ministry had been greatly helped by mechanical engineers during the war, and he desired to acknowledge the work done by the Workshops Capacity Committee, both in wartime and in the switchover from war to peace. Transport in the future would have to be even better than before the war. The present coal shortage was a serious problem, for the steam locomotive was probably the most economical means of traction yet devised, and its day was by no means over; moreover, the alternatives to steam traction

were so costly that they could be justified only if kept in use almost continuously. He was interested to learn that the Great Western Railway had placed orders for two gas turbine locomotives, and hoped that the possibilities of diesel-electric traction might be explored.

The Rt. Hon. Lord Courthope, P.C., M.C., who also responded, observed that, as Chairman of the Finance Committee of the Southern Railway, it had been his duty to see that funds were available to pay for the mighty locomotives with which the President had equipped that company, and for the astonishing volume of war material which he had turned out from his workshops. He thanked the Institution and its President for a delightful evening, and wished them the very best of luck in the future.

The President, Mr. O. V. S. Bulleid, was supported by:—

The Rt. Hon. A. Barnes, M.P., Mr. W. K. Brasher (Secretary, Institution of Electrical Engineers), Eng. Vice-Admiral Sir H. A. Brown, G.B.E., K.C.B., Professor D. Brunt, M.A., Sc.D., F.R.S. (President, The Physical Society), Mr. E. G. Clark, M.C. (Secretary, Institution of Civil Engineers), Air Marshal Sir W. A. Coryton, K.B.E., C.B., M.V.O., D.F.C., Rt. Hon. Lord Courthope, P.C., M.C., Maj-General A. E. Davidson, C.B., D.S.O. (Past President), Mr. C. Day, M.Sc. Tech. (Past President), Dr. C. H. Desch, F.R.S. (President, Iron & Steel Institute), The Very Rev. A. C. Don, M.A., D.D., Messrs. H. C. Emmerson, C.B., V. Z. de Ferranti, M.C., Sir Peirson Frank (President, Institution of Civil Engineers), Sir C. D. Gibb, C.B.E., M.C., F.R.S. (Vice-President), Lord Dudley

Gordon, D.S.O. (Vice-President), Colonel E. Gore-Browne, D.S.O., O.B.E., M.A., Dr. H. J. Gough, C.B., M.B.E., F.R.S. (Vice-President), Major W. Gregson, M.Sc., Dr. H. L. Guy, C.B.E., F.R.S. (Secretary), Sir F. Handley-Page, C.B.E. (President, Royal Aeronautical Society), Mr. K. Headlam-Morley (Secretary, Iron & Steel Institute), Sir R. H. Hill, K.B.E., C.B., Air Marshal Sir R. M. Hill, K.C.B., M.C., A.F.C., A.D.C., M.A., Rt. Hon. W. J. Jordan, Mr. E. H. Keeling, M.C., M.P., Eng. Vice-Admiral Sir J. Kingcome, K.C.B., Lt.-General Sir S. C. Kirkman, K.B.E., C.B., M.C., Professor F. C. Lea, O.B.E., D.Sc. (Past President), Sir J. P. R. Maud, K.C.B., C.B.E., Sir E. J. Missenden, O.B.E., Sir S. L. Pearce, C.B.E., D.Sc. (Vice-President), Sir W. Reavell (Past President), Dr. H. R. Ricardo, LL.D., F.R.S. (Past President), Mr. B. G. Robbins, M.Sc. (Secretary, Institution of Automobile Engineers), Professor A. Robertson, D.Sc., F.R.S. (Past President), Major-General Sir E. B. Rowcroft, K.B.E., C.B., Sir A. Rowlands, K.C.B., M.B.E., Sir W. A. Stanier, F.R.S. (Past President), Mr. C. W. J. Taffs (Assistant Secretary), Colonel S. J. Thompson, D.S.O. (Past President), Sir J. E. Thornycroft, K.B.E. (Past President), Messrs. F. S. Whalley, M.C. (President, Institution of Locomotive Engineers), Mr. W. Cyril Williams, Rt. Hon. J. Wilmot, M.P., Mr. F. G. Woollard, M.B.E. (President, Institution of Automobile Engineers).

**L.M.S.R. AND THE TRADER.**—Mr. W. H. Vine, Commercial Assistant to District Goods Manager, Broad Street, L.M.S.R., will deliver an address to the Institute of Traffic Administration, London Centre, at Livingstone House, 42, Broadway, London, S.W.1, on November 27 at 7 p.m. on "The L.M.S.R. and the Trader."

## Valuation of Railways

The Railway Assessment Authority has issued its annual report\* for the year ended March 31, 1946, under the Railways (Valuation for Rating) Act, 1930, and under that Act as applied to the London Passenger Transport Board.

Dealing with the third railway valuation roll relating to the four amalgamated railway companies, and operative for the rating years 1941 to 1946, mention is made of the appeals made by the London County Council to the Railway & Canal Commission against the cumulos in each part of the third roll, and to the requisite orders for the withdrawal of those appeals made by the Court on June 24, 1946. Reference is also made to the ten other appeals under Section 9(2) (b) of the Act of 1930 and in particular to the three appeals which came before the court in June and July of last year and on which decision was given by that court in July and September.

Mention is also made in connection with the third roll of the large number of Section 11 representations (approximately 900) which had been received in respect of the third quinquennial period and to the fact that those matters would be dealt with on the "revision" of the roll. The authority proceeded to carry out that stage immediately the L.C.C. cumulo appeals had been withdrawn. The part of the second L.P.T.B. roll and the parts of the third roll relating to the L.M.S.R., G.W.R. and Southern Railway Companies were "revised" by the authority on July 26 last, and the part relating to the L.N.E.R. was "revised" on September 26 last. The

total net annual values and rateable values of the railway hereditaments entered in each part of those rolls (as "revised") are set out hereunder:—

	Total N.A.V.	Total R.V.
L.M.S.R. (3rd Roll as revised)	£ 1,747,876	£ 383,429
L.N.E.R. Do. do.	1,281,499	294,286
G.W.R. Do. do.	1,629,680	377,124
S.R. Do. do.	1,341,368	300,537
L.P.T.B. (2nd Roll as revised)	849,963	726,834

In connection with future railway valuation rolls, reference is made to the later stages in certain negotiations initiated by H.M. Government which led to the passing into law on July 26 last of the Railways (Valuation for Rating) Act, 1946. That Act fixes the cumulo net annual values of each railway undertaking for the fourth quinquennial period which commenced on April 1, 1946, as follow:—

	N.A.V.
Southern Railway Company ...	£ 1,528,540
Great Western Railway Company ...	1,860,840
London Midland & Scottish Railway Company ...	1,993,760
London & North Eastern Railway Company ...	1,462,090
London Passenger Transport Board ...	969,740

In the statement of accounts attached to the authority's report, the net expenditure on the main-line account for the year 1945/46 is shown to have been £21,037 (approximately). The net expenditure on the London Passenger Transport Account, for that year is given as £3,168 (approximately).

The report finally mentions that Mr. A. E. Joll, the Clerk of the authority, had been given leave of absence to enable him to serve in the organisation for the post-war control of Germany and that, in the meantime, the authority's work had been very satisfactorily discharged by the Acting Clerk, Mr. F. L. Bristow, P.A.S.I.

\* "Annual Report for the Year ended March 31, 1946, of the Railway Assessment Authority." The Railway Assessment Authority, 32, Queen Anne's Gate, London, S.W.1, price 9d.

## Brush Electrical Engineering Co. Ltd.

The adjourned fifty-seventh general meeting of the Brush Electrical Engineering Co. Ltd. was held at Loughborough on October 22, Sir Ronald W. Matthews (Chairman of the company) presiding.

The Chairman, in a statement circulated with the report and accounts, recalled that the accounts had been delayed, pending the settlement of a very large number of outstanding Government contracts, on which prices had not been fixed at December 31, 1945. Most of these contracts had been cleared, and as to the balance, the directors were satisfied that the amounts ultimately agreed would be not less than those taken into the accounts.

The trading profit of the company for 1945 amounted to £61,217, as compared with £252,875 for 1944. The 1945 figure was adversely affected because of the cessation of hostilities and the consequent cancellation and/or curtailment of practically all the company's Government contracts, with a resultant reduction in turnover of approximately threequarters of a million pounds. A number of cancellation claims on Government Supply Departments had been agreed, and £72,964 had been credited to profit and loss account.

The net profit of the company, which had been carried to the appropriation account, amounted to £45,447, against £136,980 in 1944. To this figure of £45,447, must be added the amount of £11,560, brought forward from last year's account, and a sum of £32,088, being the amount of tax reserve now calculated to be no longer necessary. After making the appropriations, as shown in the appropriation account, there was a balance of £56,744, which the directors recommended should be carried forward.

The main additional factor contributing to the disappointing drop in profits was

the disruption caused by the changeover to peacetime production. With the resumption of peacetime activities, the company was faced with the problem of re-starting, at the earliest possible date, manufacture of products to pre-war design, or alternatively facing up to the further delays involved in the introduction of extensive modifications and, in a number of outstanding instances, completely new designs. Having regard to the future interests of the company, it was decided to adopt the latter course. As a result, production throughout the latter half of 1945, and the first half of 1946, was adversely affected by the extensive development, retooling, and new shop layouts necessitated by a range of new products.

As an example of the company's policy, the Chairman mentioned that when the coachwork department ceased the manufacture of special vehicle bodies for war purposes, it was decided to convert the equipment for building all-metal bus bodies, instead of resuming production of composite bodies, such as had been built before the war. It was the view of the directors that the new all-metal designs would place the company in the forefront of contemporary manufacturers in this country and, furthermore, enable them to meet the growing American competition in the Empire and foreign markets. Prototypes produced to date had been very favourably received, and the order book covered a wide range of bus bodies to a value of over £1,000,000.

In conclusion, the Chairman said that the company had acquired the whole of the assets and shares of Oil Engines (Coventry) Limited, and the goodwill and assets of Flather & Co. Ltd., Leeds, which would expand the company's range of electric motors. Negotiations were almost con-

cluded for the formation of associated companies in India, which would produce both engine and electrical goods.

The report and accounts were adopted.

## Questions in Parliament

### Rail and Road Transport Memorandum

Sir J. Mellor (Sutton Coldfield—C.) on October 15 asked the Minister of Transport whether he had considered the memorandum submitted in July by the main-line railway companies and the Road Haulage Association; and whether he had any statement to make.

Mr. Alfred Barnes (Minister of Transport): I have studied the memorandum, but the Government has other plans.

### Oil-Burning Locomotives

Mr. L. D. Gammans (Hornsey—C.) on October 8 asked the Minister of Transport how many locomotives were to be converted to oil burning; what was the cost of the conversion; and what were the running costs in comparison with coal.

Mr. G. R. Strauss (Parliamentary Secretary to the Ministry of Transport): Arrangements are in hand for the conversion of 1,217 locomotives to oil burning. I am not yet in a position to give estimates of conversion and running costs.

Mr. A. R. Hurd (Newbury—C.) on October 17 asked the Minister of Transport how many railway locomotives were to be converted to burn oil; what was the cost to public funds; what was the estimated saving in coal; and the estimated requirements of imported fuel.

Mr. Alfred Barnes: I would refer Mr. Hurd to the reply given to Mr. L. D. Gammans on October 8. It is estimated that when the scheme is in full operation the saving in coal will be 20,000 tons and the consumption of heavy fuel oil 16,000 tons a week.

## "Queen Elizabeth" Waterloo-Southampton Boat Train



Colonel Eric Gore Browne, Chairman, Southern Railway Company, shaking hands with the driver, Mr. G. Hawkins. On the right is Lord Simon



Mr. R. M. T. Richards, Traffic Manager, Southern Railway; Colonel Eric Gore Browne, Lady Simon and Lord Simon



## Notes and News

**Civil Engineer Required.**—A civil engineer, with knowledge of Spanish and capable of taking over general managership, is required by a British company operating a small railway in South America. See Official Notices on page 483.

**Storekeeper Required.**—A storekeeper is required by the Sudan Railways, age 30-45 years, for service in the Sudan. Applicants must be fully qualified and with real experience in highly technical storekeeping and accounting. See Official Notices on page 483.

**Assistant Locomotive Superintendent Required.**—An assistant locomotive superintendent, with early prospects of becoming locomotive superintendent, is required by a British company operating a small railway in South America. Applicants must possess a knowledge of Spanish. See Official Notices on page 483.

**Superintendent for Mechanical Transport.**—A superintendent for mechanical transport is required by the Sudan Railways for service in the Sudan, age 28 to 35, for examination of possible future routes, with a view to expansion of Sudan Railways road service. See Official Notices on page 483.

**Messrs. Sandberg.**—Messrs. Sandberg, Consulting Engineers, of 40, Grosvenor Gardens, London, S.W.1, and 25, Broadway, New York, have been re-appointed by the administration of the Royal State Railways of Siam to act for them in connection with the purchase and inspection of railway materials.

**Liverpool Overhead Railway Traffic.**—Receipts of the Liverpool Overhead Railway for the week ended October 13 were £3,222, an increase of £607 on the preceding year. Aggregate receipts, at £123,236, were £14,462 lower than for the corresponding period last year. For the six months to June 30 the decrease on aggregate was £12,184.

**District Locomotive Superintendent Required.**—A district locomotive superintendent, age 25 to 35, is required by the Sudan Railways for service in the Sudan. Candidates must be fully qualified locomotive engineers, both in theory and in practice, should have graduated in mechanical engineering from a University, and/or be chartered engineers. See Official Notices on page 483.

**Colonial Government Appointment.**—A Chief Staff Officer is required by the Government of Palestine for the Railway Department for two tours of 18 to 24 months with prospect of permanency. Candidates, between 40 and 45, must have had a high standard of education and have had at least 10 years' experience, preferably on a home railway, of all staff administrative duties. See Official Notices on page 483.

**Patents: "Licences of Right."**—Notice has been given that applications have been made for the cancellation of the Indorsements "Licences of Right" on the following patents:—

No. 507,237, dated October 8, 1937, in respect of improvements in automatic electric regulators for controlling the excitation of dynamo electric machines (grantee: English Electric Co. Ltd.).

No. 519,887, dated October 5, 1938, in respect of improvements in control gear for electrically-propelled vehicles (grantee: English Electric Co. Ltd.).

Any person may give notice of opposition to either of the applications by lodging

ing Patents Form No. 24 at the Patent Office, 25, Southampton Buildings, London, W.C.2, on or before November 2.

**British Aluminium Co. Ltd.**—On his recent relinquishment of his position as Controller of Light Metals, Ministry of Supply, Mr. C. G. McAuliffe has taken up an appointment as a Departmental Manager in the Sales Division of the British Aluminium Co. Ltd. Mr. McAuliffe is located at the company's head offices, Salisbury House, London Wall, E.C.2.

**Rapier Engineering Training.**—Ransomes & Rapier Limited, Ipswich, offers a special apprenticeship training in general engineering in several of its works departments. Applicants up to 17 years of age may be accepted. Apprenticeships end on the 21st birthday. Working hours are as normally worked in the industry, and the agreed Federation rates are paid.

**Engineering Assistants Required.**—Engineering assistants, civil (senior), are required by the Crown Agents for the Colonies for the engineering designs department at their London office. Candidates, who must be over 30 years of age, must be first-class draughtsmen, and have had considerable experience in a civil engineer's or a railway company's, or a structural steelwork firm's drawing office. See Official Notices on page 483.

**Railway Wages Raised in Canada.**—It is reported from Ottawa that the National War Labour Board has authorised an increase in wages of 10 cents an hour to employees of virtually all trades engaged in running railways in Canada. In announcing its decision, the board indicated that the railway companies affected did not oppose the demand for higher wages, but pleaded inability to pay them without compensating increases in the prices of the services they rendered. The case for deferment put forward by the C.P.R. is reported in our Overseas section, and an application for a 30 per cent. increase in rates is summarised.

**Iron and Steel Production for September.**—Production of both pig iron and steel for September last was higher than in August. Pig iron continued to be turned out at a greater rate than last year. Steel output was lower than for September last year, but on an annual basis, for the third quarter of this year, it was nearly 1,000,000 tons better than last year:—

	1945		1946	
	Weekly average	Annual rate	Weekly average	Annual rate
First quarter ...	135	6,992	146	7,566
Second quarter ...	133	6,894	151	7,827
Third quarter ...	133	6,893	147	7,622
August ...	122	6,358	145	7,558
September ...	139	7,224	147	7,660

### STEEL INGOTS AND CASTINGS (000'S OF TONS)

	1945	1946
First quarter ...	233	12,126
Second quarter ...	227	11,814
Third quarter ...	211	10,988
August ...	182	9,465
September ...	241	12,514

**Interchange with Steam Trains at Kings Cross and Moorgate.**—As a result of post-war reconstruction work at Kings Cross and Moorgate Stations, London Transport, passengers from the Inner Circle and Metropolitan Lines have been given improved peak-hour connections with the L.N.E.R. Hatfield line and the L.M.S.R. St. Albans line as from October 7. Two 300-ft. platforms at Kings Cross Station, blitzed in 1940, have been reconstructed on the widened line between Farringdon and Finsbury Park. Two blitzed platforms have been reconstructed also at Moorgate. L.N.E.R. peak-hour trains to Moorgate from Hatfield, Welwyn Garden City, and Hertford North stop at the new

platforms at Kings Cross, giving easy exchange facilities to passengers going on by the Metropolitan and Circle Lines. There is also a peak-hour service of L.M.S.R. trains from Moorgate to Radlett, St. Albans, and Harpenden, stopping at Kings Cross and affording similar facilities to London Transport passengers.

**Bolivar Railway Co. Ltd.**—The report for the year to December 31, 1945, shows gross working receipts of £58,581, and total receipts, including exchange profit on remittances and sundries, of £62,954. The

## British and Irish Railway Stocks and Shares

Stocks	Highest 1945	Lowest 1945	Prices	
			Oct. 22, 1946	Rise Fall
G.W.R.				
Cons. Ord. ...	60½	47½	58½	— ½
5% Con. Pref. ...	124½	104½	116	+ 3½
5% Red. Pref. (1950) ...	107½	101½	105½	+ 1
5% Rt. Charge ...	137½	120	131½	+ 2
5% Cons. Guar. ...	135½	117	129½	+ 4
4% Deb. ...	118	106	119	+ 3
4½% Deb. ...	119½	108	119	+ 3
4½% Deb. ...	124½	111½	125½	+ 2½
5% Deb. ...	138	124	135½	+ 2
2½% Deb. ...	83	74½	92½	+ 1
L.M.S.R.				
Ord. ...	33	23½	29	—
4% Pref. (1923) ...	65	50	61	+ 1
4% Pref. ...	80½	69½	83	+ 1½
5% Red. Pref. (1955) ...	106½	99½	104½	+ 1
4% Guar. ...	106½	97	105½	+ 2
4% Deb. ...	110½	102	112½	+ 3
5% Red. Deb. (1952) ...	110½	103½	106½	— 1
L.N.E.R.				
5% Pref. Ord. ...	8½	5½	5½	—
Def. rd. ...	4½	2½	2½	—
4% First Pref. ...	62½	49½	58	—
4% Second Pref. ...	33½	24½	24½	+ ½
5% Red. Pref. (1955) ...	103	96	100	+ 3
4% First Guar. ...	104½	95	105	+ 3
4% Second Guar. ...	97	89½	99½	+ 2½
3% Deb. ...	91½	82½	86½	+ 5
4% Deb. ...	109½	101	112	+ 3
5% Red. Deb. (1947) ...	103½	100	99	—
4½% Sinking Fund Red. Deb. ...	106½	103	106½	+ 1
SOUTHERN				
Pref. Ord. ...	79½	63	75½	+ 2½
Def. Ord. ...	27	20½	22½	— 4
5% Pref. ...	124½	104	115	+ 1
5% Red. Pref. (1964) ...	117	107	110½	+ 1
5% Guar. Pref. ...	135½	117	129½	+ 4
5% Red. Guar. Pref. (1957) ...	117	106½	112½	+ 1
4% Deb. ...	117	104½	119	+ 4
5% Deb. ...	137	124	136	+ 3
4% Red. Deb. (1962- 67) ...	112	104½	111½	+ 1
4% Red. Deb. (1970- 80) ...	113½	104	111½	+ 1
FORTH BRIDGE				
4% Deb. ...	106	103	106	—
4% Guar. ...	106	101	103	—
L.P.T.B.				
4½ "A" ...	125	117	130½	+ 3
5% "A" ...	135	127	139½	+ 2
3% Guar. (1967-72) ...	100	97½	105½	+ ½
5% "B" ...	125½	115	124½	+ 2½
"C" ...	70	58	58½	—
MERSEY				
Ord. ...	37	31½	31	+ 1
3% Perp. Pref. ...	72½	68½	74	—
4% Perp. Deb. ...	104½	104	106	—
3% Perp. Deb. ...	84	78½	85	—
IRELAND*				
BELFAST & C.D.				
Ord. ...	8½	6	7½	—
G. NORTHERN				
Ord. ...	34	24½	37½	—
Pref. ...	52½	42½	58½	+ ½
Guar. ...	80	68	92	—
Deb. ...	97½	87½	101	— 4
IRISH TRANSPORT				
Common ...	—	—	18/9	+ 4½
3% Deb. ...	—	—	103	—

\* Latest available quotation

# THE RAILWAY GAZETTE

## OFFICIAL NOTICES

### Crown Agents for the Colonies

#### COLONIAL GOVERNMENT APPOINTMENTS

**A** APPLICATIONS from qualified candidates are invited for the following post:—  
**CHIEF STAFF OFFICER** required by the Government of Palestine for the Railway Department for two tours of 18 to 24 months with prospect of permanency. Salary: £P1,100 a year plus expatriation allowance of £P200 a year and cost-of-living allowance of £P15,800 a month for a single man and between £P17,854 and £P22,278 for a married man according to number of children. (E.P.I. = £1.) Free passages. Candidates, between 40 and 45, must have a high standard of education and have had at least 10 years' experience, preferably on a Home Railway, of all staff administrative duties. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/17168 on both letter and envelope.

### Sudan Government

**SUDAN RAILWAYS** require a Superintendent, Mechanical Transport, for service in the Sudan, age 28-35, for examination of possible future routes with a view to expansion of Sudan Railways road service, to superintend Sudan Railways Mechanical Transport and Workshops, maintaining mechanically operated appliances (tools and plant), and for extension of departmental road services.

Applicants must have served a full apprenticeship or pupillage, preferably in an automobile works of high repute, and should either possess a University Degree in Engineering, or be Corporate Members of the Institution of Mechanical Engineers or Institution of Automobile Engineers. Experience, in a responsible capacity, in the maintenance of a fleet of cars and in road haulage is essential. Experience in the operation of Mechanical Transport under desert conditions is most desirable.

Appointment on Short-Term Contract for two years in the first instance, at a starting salary of not less than £E.750 per annum, according to age, experience and qualifications. Cost-of-Living Allowance at the rate of 35 per cent. of salary, subject to a maximum of £E.15 per month, is now payable under Regulations now in force. An Outfit Allowance at the rate of £E.60 is payable when contract is signed, provided appointment is at a salary not exceeding £E.800 per annum. (E.E.1 = £1 0s. 6d.) Free passage on appointment. Strict medical examination. At present there is no income tax in the Sudan.

Papers containing fuller information for candidates are obtainable from the Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1.

**THE Hunslet Engine Co. Ltd.**, Leeds, are urgently requiring the services of Senior Draughtsmen. Men with Locomotive experience preferred but not essential provided applicants can satisfy requirements. Prospects of continuous work with good working conditions and canteen facilities.—Apply, 125, Jack Lane, Leeds 10.

**I**T is desired to secure the full commercial development in the United Kingdom of British Patent No. 335222 which relates to Shock Absorbing Devices, either by way of the grant of licences or otherwise on terms acceptable to the Patentee. Interested parties desiring copies of the patent specifications should apply to Stevens, Langner, Parry & Rollinson, 5 to 9, Quality Court, London, W.C.2.

corresponding figure in 1944 was £74,091. Working expenses increased by £555 to £60,087. After deducting general charges in London, the profit was £3,353, but interest and other charges took £28,722, the deficit of £25,365 comparing with one of £13,673 in the previous year.

**Beyer, Peacock & Co. Ltd.**—The directors of Beyer, Peacock & Co. Ltd. are making an issue of ordinary shares for the purpose of redeeming outstanding debenture stocks and providing additional funds for re-equipment and expansion of the business. The offer being made is of 300,000 new ordinary shares of £1 each at 21s. per share to ordinary shareholders registered October 2 on the basis of one new share for every share held.

**Two New Southern Railway Posters.**—The Isle of Wight is the subject of a new Southern poster by Adrian Allinson. It is particularly interesting in that it depicts the rural interior of the island instead of the more usual seaside view. The Channel, however, is visible in the background.

### Sudan Government

**SUDAN RAILWAYS** require a Storekeeper, age 30-45 years, for service in the Sudan for store-keeping and accounting. Applicants must be fully qualified and with real experience in highly technical storekeeping and accounting.

Appointments on Short Term Contract for two years, without post service benefits, or on Provident Fund Contract (with security for 7 years subject to satisfactory completion of probationary period of 2 years). The salary scale applicable for appointment on Provident Fund is £E.420—460—500—540—630—700 (all biennial increases)—770 maximum (triennial increases), if efficiency bar not passed after reaching £E.560. If efficiency bar passed, scale extended after £E.700 by two biennial increments of £E.70 and one triennial increment of £E.80 to £E.920 maximum. (E.E.1 = £1 0s. 6d.) The above rates would be increased by up to 6½ per cent. for appointment on Short Term Contract. There is no Income Tax payable at present in Sudan. Free passage on appointment and strict medical examination.

Starting rate would be determined according to age, experience and qualifications. Cost-of-living Allowance at the rate of 35 per cent. of salary, subject to a maximum of £E.15 per month, is now payable. Outfit allowance at the rate of £E.40 is payable when contract is signed, provided that salary on appointment does not exceed £E.800 on Short Term Contract or £E.700 on Provident Fund Contract.

Papers containing fuller information for candidates are obtainable from Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelopes "Storekeeper."

**"RAILWAY WONDERS OF THE WORLD"** (Winchester & Allen). Complete sets wanted. State price asked in first instance.—Box 22, *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

**OLD-ESTABLISHED** manufacturers, Rolling Stock Equipment and Specialities, require Company with established railway connections as Agents in Swindon/Gloucester area.—Reply, Box 24, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**ENGINEER** required by specialist firm developing railway business. Experience in locomotive and rolling stock design and railway practice desirable. Salary, £1,000 p.a., minimum according to qualifications.—Apply by letter only, stating qualifications. Box No. 23, *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

**BRITISH** Company operating small Railway in South America requires a qualified Civil Engineer with knowledge of Spanish and capable of working over General Managership (with free furnished house provided) within a short period. Write, stating salary required and giving age and full particulars of education, training and experience, to Box B443, c/o Streets, 110, Old Broad Street, London, E.C.2.

**A**N Assistant Locomotive Superintendent, with early prospects of becoming Locomotive Superintendent, is required by a British Company operating a small Railway in South America. Applicants must possess a knowledge of Spanish and have had a good general practical experience, including locomotive repairs, running shed, shop and boiler repair work. Free unfurnished house provided (furniture available locally). Write, giving age and full particulars of education, training and experience, and stating salary required, to Box B444, c/o Streets, 110, Old Broad Street, London, E.C.2.

"Southampton, Gateway to the Seas," by Walter Thomas, was printed just before the war, but could not be used then as the *Queen Elizabeth*, which it features, went immediately into war service. Its timely appearance coincides with the liner's maiden voyage in commercial service.

**Memorial Service for L.P.T.B. Staff Who Fell in the War.**—A memorial service for those of the staff of the London Passenger Transport Board who fell in the recent war was held in Westminster Abbey on October 24.

**G.W.R. (London) Lecture & Debating Society.**—The society opened its 1946-47 session on October 10, when the Rt. Hon. Harold Macmillan, P.C., M.P., formerly Minister Resident, Allied Force H.Q., Mediterranean Theatre, and a Director of the Great Western Railway, lectured on "Some Reminiscences of the Mediterranean." Sir Harvie Watt, Bt., K.C., M.P., a Director of the G.W.R., was in the chair. Meetings of the society are held in the Clerks' Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. A varied

### Crown Agents for the Colonies

**ENGINEERING ASSISTANTS**—Civil (Senior) required by the Crown Agents for the Colonies for the Engineering Designs Department at their London Office. The appointments carry a scale of salary of £400 by £18 to £525 per annum. Commencing salary fixed according to qualifications, experience, and age. Appropriate consolidation addition at Civil Service rates also payable, amounting to £90 per annum. The posts are not pensionable, but there is an Office Gratuities Scheme.

**Qualifications.**—Candidates, who must be over 30 years of age, must be first class draughtsmen and have had considerable experience in a Civil Engineer's or a Railway Company's or a Structural Steelwork Firm's Drawing Office. They must be capable of preparing detailed designs of bridges and buildings in steel; some reinforced concrete experience would be an advantage. They should have passed the Associate Membership Examination of the Institution of Civil Engineers or the Institution of Structural Engineers or hold equivalent exempting degree.

**Duties.**—Calculations, Designs and Specifications of steel structure, including Bridges and Buildings and general civil engineering design work.

Write stating age and full particulars of qualifications and experience to Box No. 2964, c/o White's Limited, 72, Fleet Street, London, E.C.4, quoting 0/154. Applications must not be made to the Crown Agents direct.

### Sudan Government

**SUDAN RAILWAYS** require a **DISTRICT LOCOMOTIVE SUPERINTENDENT** for service in the Sudan. Duties include administration of loco running sheds, maintenance of locomotives and rolling stock, and general mechanical engineering. Candidates must be fully qualified locomotive engineers, both in theory and practice, should have graduated in mechanical engineering from a University and/or should be chartered engineers. They should also have served a full pupillage or apprenticeship on a railway or with locomotive builders and should have occupied a position of responsibility for not less than one year. Age limits, 25-35.

Appointment on two years' probation with a view to permanent pensionable service or to Provident Fund Contract, with a minimum security for seven years, after probation. The salary scale under pension conditions is: £E.480—540—600—660—720—780—852—936, increments being biennial, except the last, which is after three years at £E.852. On Provident Fund terms salaries are about 17½ per cent. higher. (E.E.1 = £1 0s. 6d.) Starting rates are according to age, qualification and experience.

Outfit Allowance of £E.60 is payable, provided salary does not exceed £E.600 on Probationary Contract and £E.700 on Provident Fund Contract.

Cost-of-living Allowance at the rate of 35 per cent. of pay, subject to a maximum of £E.15, payable on all salaries up to £E.1,200 per annum.

At present there is **NO INCOME TAX** in the Sudan. Strict medical examination. Free passage on appointment.

Application forms are obtainable from the Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1, marking envelopes "District Loco Superintendent."

**CHARLES ROBERTS & CO. LTD.**, Horbury Junction, Nr. Wakefield, have vacancy for **SENIOR DRAUGHTSMAN** with experience in either Railway Rolling Stock or Structural Steelwork. House available.

programme is announced for the remainder of the session.

**Explosion in Brockenhurst Refreshment Room.**—Fourteen persons were injured at Brockenhurst Station, Southern Railway, on October 21, by the explosion of a gas cylinder used for heating tea urns in the refreshment room. A man and woman working in the refreshment room received serious injuries, and the man has died in hospital, and passengers in a train from Weymouth to Waterloo, which was standing in the station, were cut by flying glass. Two coaches of the train were damaged and had to be detached.

### Forthcoming Meeting

**November 9 (Sat.).**—The Permanent Way Institution (Manchester & Liverpool Section), at City of Liverpool Technical College, Liverpool, 3 p.m. Lectures by Mr. T. Williams, of Watford, and Mr. C. A. Greenwood, of Castle-ton.

## Railway Stock Market

Stock markets have been dominated by the advance in British Funds following the decision to redeem 3 per cent. Local Loans, and replace them by an issue of new 2½ per cent. Treasury stock, which is to be offered for public subscription at par on October 28 and will have no final redemption date. Gains in gilt-edged have been substantial in response to good investment demand, which mainly favoured long-dated stocks, while there was also a fair amount of switching into the latter from short-dated stocks. As was to be expected, Local Loans receded following the redemption news. Consols 2½ per cent., after a strong advance to the new high record of 99½ encountered profit-taking and eased to 99½.

The rise in gilt-edged stimulated a general advance in other front-rank investments, in which home railway prior charges were prominent. Home banking and insurance shares participated in the upward adjustment which has resulted from the lower yield basis of gilt-edged, while leading industrial ordinary or equity shares also rose higher, the search for investments offering attractive yields bringing in buyers. Preference shares of industrial companies were in demand for a similar reason, but were found to be in short supply. The rise in values, however, was in a large measure technical in character, and not accompanied by any rush of business. Business in fact, remained on moderate lines outside gilt-edged, although, with little selling in evidence, buying interest had a strong influence on market values.

Colliery shares continued their upward trend on estimates of ultimate compensation values, and elsewhere, Dorman Long

were good while Babcock & Wilcox rose on the unexpected increase in the interim dividend and T. W. Ward responded to the victory bonus. Beyer Peacock were 21s., Vulcan Foundry 26s. 6d., North British Locomotive 25s. 9d., and G. D. Peters 5s. ordinary shares 20s. 6d. In some directions, however, news of steel and other shortages effected sentiment, and Tube Investments, after an earlier rise, receded 3s. 1½d. to £6.

Home rails continued to attract a good deal of business, and despite profit-taking, junior stocks have held all but a small part of the advance which followed publication of "British Railways and the Future." Sentiment was affected to some extent by the opening of the Trades Union Congress, which had the effect of bringing nationalisation and political uncertainties to the fore. Nevertheless, the belief prevails that ordinary stocks, and preference stocks quoted under par, probably are considerably undervalued, assuming a reasonable compromise between private enterprise and nationalisation, or fair compensation in the event of nationalisation. Chief gains have been recorded this week in debentures, guaranteed and senior preference stocks, demand being stimulated by the fact that their good yields and high investment merits have been made still more attractive by the adjustment of British Funds to a lower yield basis.

Compared with a week ago, Great Western ordinary has eased from 59 to 58½, but on the other hand, the 5 per cent. preference rose 2½ to 115, the guaranteed stock from 125½ to 129, and the 4 per cent. debentures from 115½ to 118½. L.M.S.R. at 29 was ½ easier on balance. On the other hand, the 1923

preference gained a further point at 61, the senior preference was ½ higher at 82½; while the 4 per cent. debentures moved up from 109½ to 112; the 5 per cent. debentures were 107½d, and the guaranteed stock further improved from 103½ to 105.

Among L.N.E.R. stocks, the second preference failed to hold an earlier gain, but at 27½ was unchanged on balance, and the first preference gained a point at 58. L.N.E.R. first and second guaranteed were both two points higher; the 3 per cent. debentures have advanced from 95½ to par, and the 4 per cent. debentures from 109 to 112. Southern issues reflected the general trend, junior stocks easing and prior charges moving ahead. Southern deferred eased to 22½, but the preferred gained two points at 75, the guaranteed stock rose from 125½ to 129, and the 4 per cent. debentures from 115 to 118½. London Transport "C" was unchanged at 58½; but the prior charge stocks moved higher.

Argentine rails were better, awaiting the decision as to the capital of the new Argentine company. Buenos Ayres Great Southern strengthened from 12½ to 13, the 5 per cent. preference from 33½ to 35½, and the 4 per cent. debentures from 80½ to 81½. Buenos Ayres Western rallied to 16½; the 4 per cent. debentures were unchanged at 77. Central Argentine ordinary strengthened to 9½, and the debentures were well maintained on balance. Argentine North Eastern stocks also attracted buyers, and among Buenos Ayres & Pacific issues the 1912 debentures were favoured at 56. Mexican Railway debentures responded to the latest developments, and San Paulo ordinary advanced eight points to 107.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffic for week		No. of Week	Aggregate traffic to date			Shares or Stock	Price:		
			Total this year	Inc. or dec. compared with 1944-5		Totals		Increase or decrease		Highest 1945	Lowest 1945	October 22, 1946
						1946-7	1945-6					
			£	£		£	£	£				
Antofagasta ...	834	13.10.46	31,060	+ 3,430	41	1,547,560	1,225,240	+ 122,320	Ord. Stk.	12	8½	10½
Arg. N.E. ...	753	12.10.46	ps.287,300	- ps.23,100	15	ps.4,725,000	ps.4,610,800	+ ps.115,000	"	10	5½	16
Bolivar ...	174	Sept., 1946	4,314	- 354	39	38,409	44,105	- 5,696	6 p.c. Deb.	8½	5½	6½
Brazil ...									Bonds	25	17	29½
B.A. Pacific ...	2,771	12.10.46	ps.2,500,000	+ ps.405,000	15	ps.32,528,000	ps.29,774,000	+ ps.2,754,000	Ord. Stk.	7	5	8½
B.A.G.S. ...	5,080	12.10.46	ps.3,058,000	+ ps.361,000	15	ps.48,397,000	ps.46,554,000	+ ps.1,843,000	Ord. Stk.	13½	10½	13
B.A. Western...	1,924	12.10.46	ps.1,267,000	+ ps.147,000	15	ps.17,703,000	ps.16,878,000	+ ps.825,000	"	12½	9½	16
Cent. Argentine	3,700	12.10.46	ps.3,141,550	+ ps.50,050	15	ps.46,613,055	ps.45,891,600	+ ps.721,455	"	9½	7	10
Do.									Dfd.	5	2½	5
Cent. Uruguay ...	970	12.10.46	36,301	+ 5,318	15	529,651	509,747	+ 19,904	Ord. Stk.	7½	4	9
Costa Rica ...	262	July, 1946	37,093	+ 6,000	4	37,093	31,093	+ 6,000	"	16½	13	13
Dorada ...	70	Sept., 1946	23,100	- 6,700	39	279,875	273,135	+ 6,740	1 Mt. Deb.	103	102	102½
Entre Rios ...	808	12.10.46	ps.374,600	- ps.45,700	15	ps.6,254,400	ps.6,295,800	- ps.41,400	Ord. Stk.	7½	4½	7
G.W. of Brazil	1,030	12.10.46	34,800	+ 7,600	41	1,138,200	995,900	+ 142,300	Ord. Stk.	30-	23.6	24.6
Inter. Ctl. Amer.	794	Aug., 1946	883,411	+ 811,000	34	8,703,447	8,625,918	+ 81,051,731	"			
La Guaira ...	22½	Sept., 1946	5,949	- 793	39	51,969	56,245	+ 4,276	5 p.c. Deb.	78	70	58
Leopoldina ...	1,918	12.10.46	70,861	+ 6,476	41	2,455,467	2,148,972	+ 312,495	Ord. Stk.	4½	3½	4
Mexican ...	483	31.5.46	ps.1,464,000	+ ps.459,100	22	ps.7,706,200	ps.13,441,600	+ ps.5,220,200	Ord. Stk.	4	3½	1
Midland Uruguay	319	Sept., 1946	21,699	+ 2,970	13	61,668	55,661	+ 6,007	"			
Nitrate ...	382	15.10.46	13,413	+ 5,005	41	167,893	146,086	+ 21,607	Ord. Sh.	75.6	67.6	70-
N.W. of Uruguay	113	Sept., 1946	6,013	+ 1,441	13	17,594	15,755	+ 1,839	"			
Paraguay Cent.	274	11.10.46	£52,278	- £9,381	14	£908,445	£919,132	- £10,687	Pr. Li. Stk.	79½	77	73½
Peru Corp. ...	1,059	Sept., 1946	155,779	+ 16,149	13	476,463	422,833	+ 53,630	Pref.	10½	7½	10
Salvador ...	100	July, 1946	c82,000	- c13,000	5	c82,000	c95,000	- c13,000	"			
San Paulo ...	153½								Ord. Stk.	60½	50½	108
Taltal ...	156	Sept., 1946	6,210	+ 3,745	13	13,260	6,665	+ 6,595	Ord. Sh.	17-	10.6	18.9
United of Havana	1,301	13.10.46	37,512	- 900	15	790,620	673,968	+ 116,652	Ord. Stk.	3	1	2
Uruguay Norther	73	Sept., 1946	1,203	- 442	13	3,809	5,042	+ 1,233	"			
Canada												
Canadian National	23,535	Aug., 1946	8,772,000	- 770,000	31	63,922,500	72,970,500	- 9,048,000	"			
Canadian Pacific	17,037	14.10.46	1,324,000	- 176,000	41	56,422,750	62,211,250	- 5,788,500	Ord. Stk.	24	14½	18½
Various												
Barsi Light	202	Sept., 1946	15,112	- 1,500	26	144,427	131,265	+ 13,162	Ord. Stk.	131	123	112½
Beira ...	204	July, 1946	91,254	+ 13,909	43	67,420	770,752	+ 3,338	"			
Egyptian Delta	607	10.10.46	20,155	+ 4,848	23	272,454	257,800	+ 14,654	Pr. Sh.	10	8½	5
Manila ...									B. Deb.	71	55½	64
Mid. of W. Australia...	277	Aug., 1946	15,452	- 251	9	29,947	29,470	+ 477	Inc. Deb.	97½	85	70
Nigeria ...	1,900	July, 1946	369,411	+ 332,848	18	1,490,315	874,172	+ 616,143	"			
Rhodesia ...	2,445	July, 1946	548,983	+ 13,242	43	5,149,364	5,046,558	+ 102,806	"			
South African	13,323	21.9.46	1,201,402	+ 136,732	25	27,739,471	24,819,892	+ 2,919,579	"			
Victoria ...	4,774	May, 1946	1,351,280	+ 4,246					"			

† Receipts are calculated @ 1s. 6d. to the rupee